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Doctoral Thesis

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**Early life adverse experiences and the effect on parenting stress and schizotypal
symptoms**

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Table of Word Count

Section	Text	Abstracts, References, Tables and Appendices	Total
Abstract	296	-	296
Literature Review	7852	10,532	18,384
Research Paper	5103	11,225	16,358
Critical Appraisal	3833	953	4786
Ethics	4159	2746	6905
Totals	21,243	25,456	46,729

Thesis Abstract

A robust amount of research indicates that childhood adverse experiences can have a detrimental impact on later relational experiences and mental health as an adult. Adverse childhood experiences, such as childhood sexual abuse (CSA), or other interpersonal traumas can affect the formation of secure attachments to caregivers. These insecure attachment styles persist into adulthood, affecting all subsequent relationships including that between parent and child. This thesis firstly examines the relationship between CSA and later parenting stress in a systematic literature review. The results indicate there is no strong, consistent evidence of a direct association between CSA and later parenting stress. However, it is suggested that contact-only CSA may produce a significant association with parenting stress and that studies including both contact and non-contact CSA may need larger sample sizes to detect smaller effects. Additionally, an indirect relationship between CSA and parenting stress through current level of depression is proposed. The review highlighted that clearer definitions of CSA and use of properly validated questionnaires are essential to progress this field of research and enable generalisability of results.

The aim of the second paper was to investigate associations between attachment, parenting and schizotypy in a non-clinical sample. Participants ($N = 134$) completed self-report measures online and hypotheses were tested using correlation and mediation analysis. Results found that parenting stress mediated the association between attachment anxiety/avoidance and schizotypy, though parenting competence was not significant as a mediator in a parallel model. Childhood trauma was associated with schizotypy and attachment but was not associated with parenting variables, preventing inclusion in mediation analysis. The study adds to the understanding of what may exacerbate schizotypal symptoms in the first 12 months postpartum as parental attachment insecurity and parental stress together predicted elevated self-reported experiences of schizotypal symptoms in this period.

Declaration

I hereby declare that this thesis reports original research conducted between July 2015 and November 2016 in partial fulfilment of the Doctorate of Clinical Psychology at Lancaster University. The work presented here is entirely my own except where indicated by reference to the work of others. No part of this manuscript has been submitted for the award of any other academic degree.

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I would like to thank Emma Eastoe from the Lancaster Postgraduate Statistics Centre who provided valuable tutoring and timely responses to statistical queries; your help was invaluable.

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Chapter 1: Systematic Review

Historical childhood sexual abuse and the effect on later parenting stress: A systematic
review of the literature

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Abstract

An individual's own experiences of childhood and being parented are likely to be key determinants of their later parenting experiences. Childhood sexual abuse (CSA) is arguably the most toxic experience to occur in childhood and therefore may be particularly likely to impact on parenting stress in the context of parenting one's own children. This paper aims to review studies investigating associations between earlier CSA and later parenting to determine the size and consistency of the effects, identify any mediators and moderators of the relationship and assess the quality of the evidence base. PsycINFO, Academic Search Complete, CINAHL, MEDLINE, Web of Science, PubMed, and PILOTS were searched from date of inception until 4th March 2016 and 14 studies met the inclusion criteria. Seven of these studies indicated a degree of direct association between experiencing CSA and later parenting stress, two studies found no association and five studies suggest other variables such as locus of control and current stressors may affect the relationship between CSA and parenting stress. Additionally, 10 studies suggest an indirect relationship between CSA and parenting stress through current level of depression. Clearer definitions of CSA and use of validated questionnaires are essential to progress this field of research.

Keywords: Childhood Sexual Abuse (CSA); Parenting Stress; Systematic Review

Introduction

It is widely acknowledged that parenting, and first time parenting in particular, may be stressful (Ammerman et al., 2013; Feinberg, Jones, Kan, & Goslin, 2010). Parenting stress can be defined as “the aversive psychological reaction to the demands of being a parent” (Deater-Deckard, 1998, p. 315). However, this reaction is multi-faceted and relies on several factors including (and not limited to) the parents’ psychological health, their relationship with their child, sources of support and their own experiences of being parented (Anthony et al., 2005). Parents will therefore differ in terms of the amount of stress they experience, though it is expected that most parents will experience stress at some point. Research suggests that elevated parental stress can have a negative effect on the parent-child relationship (Deater-Deckard & Scarr, 1996). For instance, stress can intensify harsh and more punitive parenting styles, resulting in lower emotional well-being for children (Crnic, Gaze, & Hoffman, 2005). Behavioural problems may also be exacerbated by such parenting which may increase levels of parenting stress, indicating the existence of a bidirectional relationship (Vallotton, Harewood, Froyen, Brophy-Herb, & Ayoub, 2016).

An individual’s own experiences of childhood and being parented are likely to be key determinants of their parenting style. Research has demonstrated that childhood maltreatment experiences are likely to have detrimental effects on subsequent parenting abilities (Fitzgerald, Shipman, Jackson, McMahon, & Hanley, 2005). For instance, a robust association was identified between mothers who had experienced childhood physical abuse and records of maltreatment of their infants before the age of 26 months (Berlin, Appleyard, & Dodge, 2011). Mothers who experienced childhood emotional abuse have been reported to display reduced empathic responding to their six-month old infants and score lower on measures of parental self-efficacy (Bert, Guner, & Lanzi, 2009; Caldwell, Shaver, Li, & Minzenberg, 2011). Additionally, the early experience of CSA has been associated with

more permissive practices in later parenting and an increased potential for the abuse or neglect of offspring (Ruscio, 2001; Trickett, Noll, & Putnam, 2011). Such evidence suggests that difficult childhood experiences may have pervasive and enduring consequences which affects an individual's relational style throughout life, including in the parenting role.

With regard to CSA, it is widely recognised that the experience of CSA can be detrimental both to the developing child and later in life (Wohab & Akhter, 2010). Recent research has also highlighted that CSA may affect the structure and function of some areas of the brain, including the hippocampus, amygdala and cerebral cortex (Teicher & Samson, 2016). While a thorough review of this research is beyond the scope of this paper, the emerging picture is that these structural and functional changes as a result of CSA may make the individual more vulnerable to later stress and affect their ability to cope with this stress. It is therefore not surprising that CSA is associated with psychopathology in adulthood, including depression, psychotic symptoms, and substance abuse (Coles, Lee, Taft, Mazza, & Loxton, 2015).

A number of studies have now investigated how CSA affects parenting abilities including parenting stress, though to date no systematic review has been conducted looking specifically at CSA and later parenting stress. This paper aims to review these studies to determine the consistency and size of effects, and the quality of the literature. Furthermore, a review will highlight other important factors that may moderate or mediate this relationship. Understanding factors that moderate the relationship between CSA and parenting stress is important as these variables may affect the strength of this relationship. For example, more severe types of CSA such as incest have been associated with the most severe and long-reaching effects (Essabar, Khalqallah, & Dakhama, 2015), though it is not known whether these factors, or indeed any other moderators, are important with regard to parenting stress.

It is also important to determine if any mediating variables are indicated in the relationship between CSA and parenting stress, as mediators explain the underlying mechanisms via which one variable affects another. For instance, there is an established link between parenting stress and depression, particularly in the postnatal period (Epifanio, Genna, De Luca, Roccella, & La Grutta, 2015) and research has also suggested a possible link between Postpartum Depression (PPD) and historical childhood sexual abuse (Wosu, Gelaye, & Williams, 2015). This suggests depression may mediate the relationship between CSA and later parenting stress. Identifying mediating variables is important as these may provide opportunities to intervene in the relationship between CSA and parenting stress.

Previous reviews on parenting practices of adult CSA survivors contain limited reference to parenting stress. An early paper by DiLillo and Damashek (2003) reviewed the parenting characteristics of CSA survivors, but this review only included two studies which had used a measure of parenting stress; one of which suggested no association between CSA and parenting stress (Alexander, Teti, & Anderson, 2000) and one which suggested mothers with a history of CSA reported elevated stress compared to controls (Douglas, 2000). A more recent review by De Jong, Alink, Bijleveld, Finkenauer and Hendriks (2015) on the transition to adulthood of CSA victims also cites the Douglas (2000) paper which indicated a significant association between CSA and parenting stress, but cites no further studies regarding parenting stress. However, De Jong et al. included only contact abuse studies in their review, excluding studies that reported both contact and non-contact abuse together, and furthermore only included studies which used a non-abused comparison group. This means that a number of studies may have been omitted and the results they report are therefore limited and not representative of the range of experiences of CSA survivors.

In summary, the increasing awareness of the negative sequelae caused by stress both on the parent-child relationship and on the developing child means an understanding of

factors that increase parenting stress is vital. Therefore, the aims of this systematic review are to examine the literature to determine the consistency and strength of association between CSA and later parenting stress and to assess the quality of the studies found. Any mediators or moderators between CSA and parenting stress will also be explored.

Method

To ensure clarity of reporting this systematic review has been conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement (Liberati et al., 2009).

Eligibility Criteria

Study characteristics. The inclusion criteria for this systematic review were as follows: 1) participants who had experienced historical CSA and were now parents, 2) a self-report measure of stress; 3) English language and 4) published in a peer-reviewed journal. Studies which did not separate CSA from other types of childhood maltreatment were excluded. No restrictions were placed on the age of participants or on date of publication.

Information Sources

Potential studies were identified by searching electronic databases between 14th January and 4th March 2016. The following databases were searched from date of inception until 4th March 2016: PsycINFO, Academic Search Complete, CINAHL, MEDLINE, Web of Science, PubMed, and PILOTS. Each database was searched individually using the same key words and any specific thesaurus/MeSH headings suggested by the database. Additionally, reference lists of potential articles were hand searched and Google Scholar was used to perform citation searches on these potential articles.

Search Terms

Search terms were selected from reviewing literature pertaining to CSA and parenting stress and in particular search terms used in previous systematic reviews of CSA, for example Wosu, Gelaye and Williams (2015).

The following terms were used in each database:

parent* OR maternal OR paternal OR mother OR father

AND

stress* OR distress*

AND

earl* OR surviv* OR childhood OR previous OR prior

AND

abus* OR trauma* OR maltreat* OR advers*.

Individual database thesaurus terms were also used to ensure no studies were missed.

Study Selection

The PRISMA flow diagram is presented in Figure 1 to summarise the study selection and screening process. Studies identified in each database search were transferred to EndNote to allow removal of duplicates. Following this, 2,220 titles and abstracts were screened for eligibility, which led to the exclusion of 1,999. The method sections of the remaining 221 records were then screened leading to the exclusion of 162. The main reason for exclusion at this stage being the absence of a self-report measure of parenting stress. The full text of the remaining 59 studies was reviewed and a further 45 excluded, the reasons for which are: (a) the study did not report the analysis between CSA and parenting stress ($n = 35$) and (b) the study measured all childhood abuse as a homogenous factor ($n = 5$). Finally, five study authors were contacted for data necessary to facilitate inclusion in the review. These studies had used measures appropriate for inclusion in the review, but the article did not report the analysis between these measures. However, the authors did not respond so the studies could not be included. This left 14 studies for inclusion in the systematic review.

Throughout the screening process any papers which the first author was unsure about including were discussed and agreed with the research team.

[INSERT FIGURE 1]

Data Extraction

Data was extracted from each study on (a) study design and participant characteristics, (including study design, country of origin, ethnicity of sample, number of participants, type of sample, and mean age of parent), and (b) the measures used for CSA and parenting stress, the type of analysis used and the results obtained. Table 1 presents the study characteristics and demographic data for the participants in each study and Table 2 presents the measures used in each study, how the data was analysed and the results from each study.

[INSERT TABLE 1]

[INSERT TABLE 2]

Quality Appraisal

The Effective Public Health Practice Project (EPHPP) tool (Thomas, Ciliska, Dobbins, & Micucci, 2004) was used to assess the methodological quality of the studies identified as eligible for inclusion in the review. This tool identifies eight domains for studies to be rated on, the first six of which then combine into an overall quality rating for the study of ‘weak’, ‘moderate’ or ‘strong’. To be classified as strong there must be four strong ratings across the six components with no weak ratings. To be classified as moderate there must be no more than one weak rating with less than four strong ratings. Finally, a weak rating is given for those studies with more than two weak ratings across the components. The EPHPP has been reported to have reasonable inter-rater agreement for the six domains and excellent inter-rater agreement for the overall final rating (Armijo-Olivo, Stiles, Hagen, Biondo, &

Cummings, 2012). The results of this appraisal are reported in Table 3 with full details of the appraisal tool in Appendix A. All studies were retained in the review following the quality appraisal which will be discussed further in the results section below.

[INSERT TABLE 3]

Results

Study Characteristics

Of the 14 eligible studies, four used the same primary data set for analysis (Mapp, 2006; Pazdera, McWey, Mullis, & Carbonell, 2013; Renner, Whitney, & Easton, 2015 and Schuetze & Eiden, 2005). This means there are 11 separate samples in this review with size of samples ranging from 44 to 483; a total of 1,545 participants (see Table 1 for a summary of demographic characteristics). Of the 11 different samples, five employed a cross-sectional research design and two further studies included a case-control comparison group. The remaining four samples used a prospective design, measuring CSA at time point one and parenting variables at time point two. All studies recruited only mothers with six of the 11 samples from the USA, two from Canada, two from Australia and one from Scotland. Most studies recruited mothers from a non-clinical population (eight out of the 11 samples; $n = 1391$) mostly using a response to advert procedure and only three of the 11 samples were recruited from a clinical population ($n = 154$), including a mother and baby unit, a mental health outpatient clinic and a therapeutic community. Reporting on the ethnicity of participants varied: three studies did not report the ethnicity of participants, five of the eleven samples were mostly Caucasian participants and three samples reported a majority of African-American participants.

Measures

Parenting stress. Eleven of the 14 studies (79%) used the Parenting Stress Index (PSI, Abidin, 1995) or the Parenting Stress Index – Short Form (PSI-SF, Abidin, 1995), see Table 2. One further study used several subscales of the PSI (Renner et al., 2015) and another study used a measure which included some items from the PSI (Barrett, 2009). Only

one study used an alternative measure, the Everyday Stress Index (Lutenbacher, 2000). The frequent use of the PSI and the PSI-SF makes comparison between studies more viable.

CSA. In contrast, there was little homogeneity among studies regarding measurement of CSA (see Table 2). Two studies used the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998), but the remainder of the studies used either a different measurement tool such as the Child Abuse and Trauma Scale (CATS; Sanders & Becker-Laussen, 1995) used in Harmer, Sanderson and Mertin (1999), or questions designed by the researchers.

Only six studies explicitly stated their definition of CSA (Alexander et al., 2000, Douglas, 2000, Mapp, 2006; Pazdera et al., 2013, Renner et al., 2015, & Schuetze & Eiden, 2005; see Table 4). Within these six studies, two limited their definition of CSA to contact abuse only (Alexander et al., 2000 & Douglas, 2000) and the remaining four, which used the same primary data set, included both contact and non-contact abuse. Additionally, the majority of studies used measures that simply measured the presence or absence of CSA. The exception to this is Wright, Fopma-Loy and Fischer (2005) who initially asked mothers who had experienced CSA to respond to an advert for participants. Responses to the anonymised mailed questionnaire were then coded for severity by the researchers. In summary, the lack of consensual definitions and measurement of CSA makes comparison between studies difficult.

[INSERT TABLE 4]

Study quality

No studies were rated as strong in quality overall using the EPHPP tool (see Table 3). Eight were rated as moderate and six were rated as weak in quality, though several studies contained components that were rated as strong. Most of the studies were rated as moderate in the data collection section with three studies being rated as strong, mainly due to robust

reporting of the reliability and validity of the measures used. Ten studies were rated as moderate on selection bias with the study sample considered to be at least somewhat likely to be representative of the target populations. However, four studies were rated weak mostly because participants self-referred into the study. A notable limitation in the majority of studies ($n = 11$) was the lack of description of possible confounding variables in either the methodological design or analysis of the studies. Most studies highlighted this issue later in the discussion section when suggesting possible explanations of their results, but very few address potential confounders earlier on.

Direct Associations Between CSA and Parenting Stress

Seven of the 14 studies indicated a degree of direct association between experiencing CSA and later parenting stress, with six presenting statistically significant results (correlations ranged between $r = .13$ to $.33$; Cohen's d ranged between $.22$ to $.65$) and one indicating the mean scores of the CSA group were markedly higher than the norms provided by Abidin (1995). Two of the 14 studies did not find any association between CSA and parenting stress and the remaining five studies suggest other variables may affect the relationship between CSA and parenting stress, such as locus of control and current stressors.

Two of the seven studies which found an association between CSA and parenting stress found a significant positive association between mothers who reported CSA and higher scores on the PSI-SF (Douglas, 2000; Pereira et al., 2012). These two studies were from different samples. The remaining five studies reported significant associations between CSA and one subscale of the PSI (Buist & Janson, 2001; Ethier, Lacharite, & Couture, 1995; Renner et al., 2015; Schuetze & Eiden, 2005, & Wright et al., 2005), including the parenting domain ($n = 4$) and the optional life stress scale ($n = 1$).

Both the Douglas (2000) and the Pereira et al. (2012) study were rated as moderate in quality. Douglas was only rated as weak on controlling for confounds as the study reported that the index group in this study were significantly more likely to be younger, live in a more deprived area and have experienced parental separation, divorce or death than the control group, yet these variables were not discussed in the method or controlled for in the analyses. The significant results in this study may therefore be accounted for by confounding variables such as these, with elevated stress reported by the index group possibly being associated with variables other than CSA per se. Alternatively, the significant results found in this study may be due to the very clear limits on the definition of CSA which was contact abuse only before the age of 16, whereas several other studies that report non-significant effects included non-contact sexual abuse (e.g. Mapp, 2006). Arguably, lasting effects of CSA may be more likely following contact rather than non-contact sexual abuse, possibly accounting for the significant results in this study.

The significant results found in the Pereira et al. (2012) study may in part be due to the large sample size ($N = 291$) which may have been sufficient to detect subtle associations between CSA and parenting stress in the community sample and protect against type II errors. The study was rated as moderate in quality, only scoring one weak rating due to the cross-sectional study design. However, this study was rated as strong on data collection as it used measurement tools that have been shown to be both valid and reliable, the CTQ and the PSI-SF. The CTQ does include non-contact CSA, but the use of a standardised measure of childhood trauma which reports robust reliability ($\alpha = .91$ for the whole scale, $.94$ for the CSA subscale in a community sample; Scher, Stein, Asmundson, McCreary, & Forde, 2001) may have enabled consistent reporting of experiences across participants.

Of the five studies that report associations between CSA and a subscale of the PSI, three were rated as moderate in quality and two were rated as weak. Buist and Janson's

(2001) study is of moderate quality overall, with a weak rating for the lack of description regarding control of confounding variables. They reported that the CSA group in their sample scored significantly higher on the optional life stress scale on the PSI than the comparison group ($d = .65$). As this is the only study to report the optional life stress subscale of the PSI it is difficult to make any assumptions about the significance of this finding. No significant difference was reported between the CSA group and the comparison group on either the parent or child domain of the PSI which may be due to a lack of power as the sample size was relatively small ($N = 45$; CSA group $n = 23$, comparison group $n = 22$) which increases the possibility of type II error.

Renner et al. (2015) found that women reporting CSA had slightly higher mean scores on all five subscales of the PSI parenting domain they included in their study when compared to women not reporting CSA. Effect sizes were calculated for these subscales and three were found to show a small effect (see Table 2). Additionally, Schuetze and Eiden (2005) reported that CSA was significantly associated with parenting stress on the parent domain of the PSI, but not significantly associated with the child domain. Both these studies used the same primary data set and are of moderate quality, which suggests the results reported may reliably indicate that there is a degree of association between CSA and later parenting stress on the parent domain of the PSI for the participants in this study, which were drawn from a community sample.

Both Ethier et al. (1995) and Wright et al. (2015) were rated as weak on the quality assessment tool, though both reported associations between CSA and scores on the parenting domain of the PSI. Ethier et al. explored issues pertaining to motherhood for negligent mothers, with parental negligence defined as “a serious omission from the parent who endangers the child’s development” (p. 622). All mothers in this group had been implicated in severe maltreatment and were found to experience significantly higher levels of stress than

the control group. Both the index and comparison groups contained mothers with histories of CSA and Ethier et al. found that total sexual abuse was significantly associated with stress on the parent domain of the PSI for both the index and comparison group. However, only the mothers in the control group were found to have significant associations with CSA on the total stress score. One possible explanation for this is that the index group may have more current daily stresses than the control group, given their alleged maltreatment of their children. The effects of CSA therefore appear more salient for the control group who may not have such difficult situations to contend with.

Finally, with regard to direct associations between CSA and later parenting stress, Wright et al. (2005) found that the mean scores for mother's reporting CSA on the parent subscales of the PSI were markedly higher on six out of seven subscales compared to the normative sample from Abidin (1995). Again this provides further support for an association between the parent domain of the PSI in particular and historical CSA. However, this study was predominantly weak in quality, particularly with regard to selection bias and research design, as participants had responded to an advert asking for mothers who had experienced CSA. This self-selection bias may have skewed the results making the sample in the study not representative of the population of people who have experienced CSA.

Two studies reported no association between CSA and later parenting stress. Alexander et al. (2000) did not find a significant main effect of CSA on parenting stress. However this study was rated as weak in quality with a cross-sectional design, possible selection bias with recruitment relying on response to advert and lack of control for confounders. The second study, Barrett (2009), was rated as moderate in quality and had the largest sample in this review ($N = 483$). Barrett reported the mean of the CSA group was not significantly different from the control group on the measure of parenting stress used and CSA did not reach significance in the regression analysis (see Table 2). It is possible that the

use of non-formal measurement tools affected the results obtained and this component was rated as weak on the EPHPP. For example, the CSA measure was: “has a stranger, acquaintance, date or relative ever tried or succeeded in doing something sexual to you against your wishes?” (p. 496) with affirmative responses followed up with a question regarding age of occurrence. This may also mean that the abuse group included participants for whom the abuse may not have been as severe as other studies which used a more stringent measure of CSA such as Douglas (2000) who defined CSA as women with a history of contact child sexual abuse before the age of 16. Idiosyncratic measurement of CSA is not unusual throughout the studies in this review, but for parenting stress other studies used a validated measure whereas Barrett did not, opting instead for a scale from a women’s employment study which was conducted in the USA, that “included items from the PSI” (p. 497). It is possible this measure was not a valid or reliable measure of parenting stress which may have skewed the results in the study. Furthermore, despite the Barrett study having a large sample, the percentage of CSA survivors in this sample was actually the smallest out of all the studies included in this review (11%, see Table 1). This increases the possibility of a type II error as it may seem as though there was no effect of CSA on parenting stress when the sample size of CSA survivors was not sufficient to detect any effect.

Only two studies limited their inclusion criteria to contact CSA only: Alexander et al. (2000) who did not find any association between CSA and later parenting stress and Douglas (2000) who found that mothers in their CSA group reported significantly more stress overall than their comparison group. This difference in results may be due to the methodological quality of the studies: Alexander et al. was rated as weak in quality and Douglas was of moderate quality. An alternative explanation may be that the Douglas study used a clinical sample from a mental health outpatient clinic where participants may be experiencing elevated stress due to their mental health difficulties rather than due to parenting per se,

whereas Alexander et al. recruited from the community where there may be less variation in the data. Lastly, the Douglas study contained a greater proportion of CSA survivors (54%) compared to the Alexander et al. study (21%) which may have enhanced the potential of identifying an association between CSA and parenting stress.

In summary, there is no strong, consistent evidence of a direct association between CSA and later parenting stress. However, the results suggest that contact-only CSA may produce a significant association with parenting stress and that studies including both contact and non-contact CSA may need larger sample sizes to detect smaller effects. Several studies suggest elevated stress on the parenting domain of the PSI but not the child domain which suggests participants were more likely to attribute parenting stress to their own characteristics rather than the characteristics of the child.

Possible Mediating Factors Between CSA and Parenting Stress

Depression. Depression was highlighted in 10 of the studies as having a significant association with both CSA and parenting stress (see Table 5). The results of eight of these studies suggest there may be a potential indirect path from CSA to parenting stress through current level of depression (Buist & Janson, 2001; Douglas, 2000, Ethier et al., 1995; Lutenbacher, 2000; Mapp, 2006, Pazdera et al., 2013, Schuetze & Eiden, 2005 & Wright et al., 2005). Five of these studies were of moderate quality and three were weak in quality. The other two studies, both rated as weak in quality, found a significant association between depression and parental stress, though the association between CSA and depression was not significant (Harmer et al., 1999; Lang, Gartstein, Rodgers, & Lebeck, 2010). Of the eight studies which found significant associations between CSA, level of depression and parenting stress, three of these used the same primary data set (Mapp, 2006, Pazdera et al., 2013, & Schuetze & Eiden, 2005) and hence the same measure of depression; the Center for

Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). This scale was also used in the Lutenbacher (2000) and Wright et al. (2005) study while the Beck Depression Inventory (BDI; Beck et al. 1961) was used in both the Buist and Janson (2001) and the Ethier et al. (1995) study. Buist and Janson also used the Hamilton Rating Scale for Depression (HDRS) and Douglas (2000) found a significant association between the depression subscale on the General Health Questionnaire (GHQ-28) and parenting stress for both the CSA group and the comparison group. The results of these eight studies, which used different but reliable methods of measuring depression, suggest depression is a significant factor in the association between CSA and parenting stress.

[INSERT TABLE 5]

With regard to the two studies which found a significant association between depression and parental stress, yet not between CSA and depression, Lang et al. (2010) found depression was significantly negatively related to defensive responding and parental distress on the PSI-SF at one year postpartum. This means that participants reported less parental distress than they may actually be experiencing. However, conclusions from Lang et al. should perhaps be interpreted with some caution because the study was of weak quality overall and retained only 31 out of 44 participants for the postpartum follow-up. Such attrition may result in a biased sample at follow-up and this small sample size is not particularly representative, making analysis susceptible to type II errors. Similarly, Harmer et al. (1999) was rated as methodologically weak and reports that some mothers chose not to complete all measures. The number of participants per measure ranged from 39 to 46 and five participants chose to complete the measures with the assistance of a researcher, which increases possibility of demand characteristics. Furthermore, approximately half of the remaining participants had missed occasional questions when they returned the measures,

which the researcher subsequently supported them to complete, again elevating the risk of bias.

Five studies conducted mediation analysis with their data (Mapp, 2006, Pazdera et al., 2013, Pereira et al., 2012, Schuetze & Eiden, 2005, & Wright et al., 2005) though only three report CSA and parenting stress as predictor and outcome variables and depression as a mediator, which are the three studies which use the same primary data set (Mapp, 2006, Pazdera et al., 2013, & Schuetze & Eiden, 2005). The other two studies report mediation using different outcome variables including maternal sensitivity (Pereira et al., 2012) and resilience domains (Wright et al., 2005). Mapp (2006) reported the results of a path analysis which indicated the only significant route from CSA to elevated scores on the PSI was through the level of current depression. This study also noted locus of control impacted scores on the PSI both directly ($r = .47$) and through depression ($r = .45$). Both Pazdera et al. (2013) and Schuetze and Eiden (2005) included other variables in their mediation models which precludes clear conclusions being made regarding whether depression mediates the association between CSA and parenting stress. Pazdera et al. (2013) conducted a multiple mediation model which included CSA as predictor, parenting sense of competence and depression as mediators, and parenting stress and maltreatment behaviour as outcome variables. They reported the fit of the model to the data was relatively poor ($\chi^2(7) = 36.17, p = <.001$). Similarly, Schuetze and Eiden (2005) found that partner violence, along with depression, mediated the association between CSA and the outcome variables which were parenting attitudes (including both parenting stress and parenting competence) and punitive discipline. However, the model did not fit the data particularly well ($\chi^2(21) = 38.17, p = <.05$). These results suggest variables other than depression may impact the association between CSA and parenting stress, though investigation of these relationships was only

conducted in studies which used the same primary data, demonstrating a need to replicate these findings in different samples.

As indicated above, the studies included in this review measured a number of other variables alongside CSA, depression and parenting stress. There was little homogeneity between studies in terms of variables measured, but several studies indicated significant associations with other factors. Positive belief systems were found to be negatively associated with parenting stress in six studies (Buist & Janson, 2001; Lutenbacher, 2000; Mapp, 2006; Pazdera et al., 2013; Renner et al., 2015; Schuetze & Eiden, 2005). For example, higher self-esteem was negatively associated with stress in the Lutenbacher (2000) study ($r = -.48, p = <.001$) and higher scores on parenting satisfaction and self-efficacy were associated with lower scores on parenting stress in Pazdera et al. (2013) and Schuetze and Eiden (2005) (associations ranged between $-.41$ to $-.68, p = <.01$). Similarly, higher social support and/or relationship satisfaction were associated with lower parenting stress for CSA survivors in three studies (Alexander et al., 2000; Harmer et al., 1999, & Wright et al., 2005). Such factors may therefore be potential mediators or moderators of the relationship between CSA and parenting stress, though were not tested as such in the studies.

Seven studies included measures of various other forms of childhood maltreatment, including neglect and physical and emotional abuse (Alexander et al., 2000; Barrett, 2009; Ethier et al., 1995; Harmer et al., 1999; Lang et al., 2010; Lutenbacher, 2000, & Pereira et al., 2012). Different types of childhood maltreatment were associated with each other in most of these studies and parenting stress was associated with the experience of childhood physical abuse in four studies (Barrett, 2009; Ethier et al., 1995; Lang et al., 2000, & Pereira et al., 2012), with neglect/negative home environment in two studies (Ethier et al., 1995 & Harmer et al., 1999) and emotional abuse in two studies (Lang et al., 2000, & Pereira et al., 2012). Furthermore, current partner violence was also associated with stress in two studies which

included a measure of this (Lutenbacher, 2000, & Schuetze & Eiden, 2005), though was only associated with CSA in Schuetze and Eiden (2005).

Finally, only six of the 14 studies reported characteristics of the CSA experienced by their participants (Alexander et al., 2000; Buist & Janson, 2001; Douglas, 2000; Lutenbacher, 2000; Schuetze & Eiden, 2005, & Wright et al., 2005). Despite the range of experiences within the categorisation of CSA, only Douglas (2000) reported analyses using these different types of experience, finding no significant difference between scores on the PSI for intra and extra-familial abuse. No studies included analysis of other potential moderators, such as age or severity of abuse, so conclusions regarding different aspects of CSA and the effects on later parenting stress could not therefore be inferred.

Discussion

In summary, seven studies suggest there is a direct association between CSA and parenting stress. Depression was identified as a possible mediator between CSA and parenting stress in ten studies, indicating the existence of an indirect pathway from CSA through depression to parenting stress. Studies also suggested other potential variables may affect the association between CSA and parenting stress, such as co-occurring childhood maltreatment, sources of support and internal belief systems. While it may have been possible to conduct a meta-analysis on the statistical results of the studies it was agreed with the research team that this would not add value to the understanding gained from the review. This is because the quality of the studies included in the review was mainly moderate-weak and considerable value came from appraising the design of the studies. Furthermore, the lack of consensual definition of CSA made comparison between studies difficult as what was categorised as CSA in one study may not have been classed as such in another, for example, contact versus non-contact CSA. Finally, it appears that the association between CSA and parenting stress may be influenced by both sample size and reliable measurement tools, with larger sample sizes and psychometrically validated measures producing more significant associations between these two variables.

An association between historical experiences of CSA and later parenting stress was found in both clinical ($n = 2$) and non-clinical ($n = 5$) samples. However, four of the seven studies which found a direct association between CSA and parenting stress reported this was significant only for the parenting domain of the PSI. One explanation for this finding is that early experiences of CSA may lead to the development of internalising disorders such as depression and anxiety (Sachs-Ericsson et al., 2010) and lower self-esteem (Schuck & Widom, 2001). This means individuals are more likely to make negative appraisals of

themselves and their abilities, perhaps resulting in attribution of stress to their own characteristics rather than their child.

Evidence of the potentially mediating role of depression in the CSA and parenting stress relationship is supportive of past research which indicates that people who experience CSA are vulnerable to developing depression (Wangel, Ryding, Schei, Ostman, & Lukasse, 2016) and that the experience of depression is associated with increased parental stress (Zajicek-Farber, Mayer, & Daughtery, 2012). CSA may increase the risk of experiencing depression, which then affects the experience of parenting, or in turn CSA may cause difficulties in parenting which then may give rise to feelings of depression. However, it is important to consider the role of reporting bias in understanding these relationships, as the presence of depression itself may lead to more negative responses on self-report questionnaires (Bistricky, Atchley, Ingram, & O'Hare, 2014). Participants may therefore be managing the parenting role adequately, but depression affects their self-judgement and leads them to negatively appraise their abilities.

The results of this review suggest contact abuse has a stronger relationship with later parenting stress than non-contact abuse. There is limited previous research on the differential effects of contact versus non-contact CSA (Landolt, Schnyder, Maier, & Mohler-Kuo, 2016), but hypothetically contact abuse is a more invasive violation than non-contact abuse, resulting in greater negative sequelae. For example, survivors of more severe forms of abuse have been reported to experience more symptoms of depression than those who experienced less severe abuse (Seltmann & Wright, 2013). However, it is important to continue to investigate non-contact CSA as the results of this review suggest effects can be detected between CSA and parenting stress if the sample is large enough, suggesting weaker but nonetheless significant findings.

It is also important to consider other aspects of abuse that may determine the effects that the experience has on parenting and other outcomes. For example, recent research regarding the effects of CSA on a child's developing brain suggests the age maltreatment occurs may have a significant impact on the negative sequelae experienced, with the younger the age of onset, the more impactful the maltreatment. It is suggested that early exposure to adversity sensitises parts of the brain, most notably the amygdala and the hippocampus, to later stress (Teicher & Samson, 2016). It may be that those studies which found stronger associations between CSA and later parenting stress included participants who experienced CSA at an earlier age than the other studies which did not find significant associations. Similarly, research has found that individuals experiencing CSA before age 12 are more likely to report higher rates of depression than individuals abused after this age (Schoedl et al., 2010). However, the studies in this systematic review grouped experience of CSA together as a homogenous group with only six reporting any characteristics of the CSA participants and only one study (Douglas, 2000) reporting analyses between CSA characteristics, finding no significant difference between scores on the PSI for intra and extra-familial abuse. More research needs to be conducted to explore such moderators of the association between CSA and parenting stress.

The relationship between historical CSA and later parenting stress is complex and many additional historical and contemporary factors may influence this association. For example, consistent with previous research (e.g. Hughes & Cossar, 2015), seven of the studies in this review found significant associations between other types of childhood maltreatment and parenting stress, including physical abuse, neglect and emotional abuse. The studies in this review also found that other mediators were significant in their analysis of the relationship between CSA and parenting stress, including locus of control, parenting sense of competence and current partner violence. These findings suggest that feelings of

disempowerment and being unable to effect change may be significant mediators of the association between CSA and parenting stress. This may result in internalising disorders and depressive symptoms, as described above (Sachs-Ericsson et al., 2010) which in turn may influence parenting stress. Insecure attachment is another potentially important mediator that was not examined by the studies included in this review. Research links early life trauma with insecure attachment (e.g. Murphy et al., 2014) and research also suggests an association between attachment insecurity and parenting stress (Kwako, Noll, Putnam and Trickett, 2010).

Conversely, protective factors, such as positive belief systems and partner/social support were found to be negatively associated with parenting stress in this review which supports previous research in this area (e.g. Zvara, Mills-Koonce, Appleyard Carmody & Cox, 2015). A secure attachment style may also be a protective factor against parenting stress and a secure attachment may contribute to the development of resilience (Rutten et al., 2013) which is an important factor to consider regarding the development of negative sequelae.

Clinical Implications

The results of this review have implications for health and social services working with mothers who have experienced CSA. Firstly, postnatal services should be mindful of potential contributing factors to new mothers' difficulties, such as previous CSA and the effect this may have on their parenting abilities. Mothers who experience difficulties beyond those expected due to normal adjustment should perhaps receive a more comprehensive assessment, which includes factors relating to their own early life experiences. Secondly, professionals in postnatal services, such as midwives and health visitors should be trained how to ask service users about early life experiences. For example, Read (2007) gives clear

guidelines for how mental health services should ask about trauma which might also be useful for staff working in postnatal services. For example, he recommends introducing such questioning as “I’m going to ask you about some unpleasant things that happen to some people in childhood. We ask because sometimes it helps throw light on difficulties later in life” (p. 106). Mothers could then be signposted to appropriate mental health or therapy services if they wanted further support. Thirdly, for mothers who access services later due to depression and/or stress, robust formulation should consider their early life experiences (Read, 2006) and link this to their presenting problems. This would offer a clear, theoretically based explanation of the mothers’ difficulties to facilitate understanding and determine potential areas for intervention. Offering interventions for treating depression, such as Cognitive Behavioural Therapy (CBT) may reduce levels of depression and indirectly impact on levels of stress.

Finally, research suggests that elevated parenting stress can have a detrimental impact on the parent-child relationship and potentially result in negative outcomes for the child (Soltis, Davidson, Moreland, Felton, & Dumas, 2015). Parenting stress can be addressed directly through parenting programmes such as The Incredible Years programme (Webster-Stratton, 2006) which aims to improve parenting abilities and subsequently child functioning. Research on parenting programme indicates parents experience reductions in both stress and depression following completion of the intervention (Bennett, Barlow, Huband, Smailagic, & Roloff, 2013), which has a positive consequence on child outcomes.

Strengths and Limitations of the review

This systematic review is the first to explore the association between CSA and later parenting stress and several strengths are noted. Firstly, the review was conducted transparently following the PRISMA Statement (Liberati et al., 2009) which enables readers

to assess the quality of the review and replicate the search. Secondly, the method employed was thorough, searching seven key databases using comprehensive search terms. Finally, studies included were assessed for quality which allowed critical appraisal of the findings of each study and the strength of the evidence overall could be assessed.

However, the absence of a shared definition of CSA and the lack of homogeneity regarding measurement of CSA limits the ability to draw firm conclusions about the association between CSA and later parenting stress. Haugaard, (2000) suggests that a definitive definition of childhood sexual abuse is challenging as perceptions of what constitutes CSA may vary between clinicians, researchers and legal systems. This problem is pervasive as Barth, Bermetz, Heim, Trelle and Tonia (2013) conducted a systematic review and meta-analysis on the prevalence rates of CSA worldwide and found notable diversity in how CSA was defined between studies. Furthermore, most studies in this review used different measures of CSA and many used idiosyncratic questions developed by the researcher which makes the reliability of the data questionable. Reporting bias and underreporting in particular are significant problems in research investigating sensitive topics like abuse and parenting and these problems are further compounded by poor measurement instruments.

The review also focused on the effects of CSA on later parenting stress and excluded other types of childhood abuse from the main analyses. This limits the inferences that can be made from this review and conclusions cannot be generalised to other types of childhood abuse. As can be seen in the results section, other forms of childhood abuse that were measured in these studies were found to have significant associations with both CSA and parenting stress. Including these along with CSA may have allowed a more comprehensive review of the effects of any childhood maltreatment on later parenting stress. Additionally, all the studies in this review focused on women and excluded men. Results therefore cannot

be generalised to men which highlights a gap in understanding how CSA may affect parenting stress for fathers. Furthermore, approximately half of the studies in the current review included predominantly Caucasian participants and half included predominantly African-American participants. It is worthy of note that the two studies that reported a significant direct association between CSA and later parenting stress (Douglas, 2000; Pereira et al., 2012) used mostly Caucasian populations. Under reporting of CSA may be a problem in some populations which may affect results, particularly in studies using comparison groups, by including participants who had experienced CSA in comparison groups rather than the CSA groups. For example, cultural taboos regarding sexual issues, shame and the status of females in some communities may prevent disclosure of sexual abuse (Fontes & Plummer, 2010). Additionally, earlier studies such as Ethier et al. (1995) may experience less CSA disclosure compared to later studies such as Pereira et al. (2012) as societal awareness and outrage regarding CSA is increasing over time which may give victims the courage to disclose.

Finally, the inclusion criteria for this review means some potential articles may have been excluded, such as grey literature and studies published in languages other than English.

Directions for Future Research

A number of potential avenues for future research have been highlighted by this review. Firstly, the most pressing task for further research in CSA is to agree definitions and validate measures for this population. Secondly, the age at which CSA was experienced should be explored as a moderator of the association between CSA and later parenting stress with a tentative hypothesis being the younger the age of CSA onset, the more likely later parenting stress will be elevated. Other moderators of the relationship between CSA and parenting stress, such as severity and type of perpetrator and current life stressors including

partner violence should also be explored, as the results of this review indicate limited investigation of these aspects. Thirdly, the role of further mediators and protective factors in the association between CSA and parenting stress, such as attachment, resilience, locus of control and parenting sense of competence should be explored further as this may provide additional information regarding the relationship between CSA and parenting stress. Finally, the gap in research pertaining to the effects of CSA on fathers should be addressed to explore if there is an association between CSA and later parenting stress for men.

Summary and conclusions

This systematic review found significant associations between CSA and later parenting stress, though the results suggest this effect is mediated by depression. Other variables may also mediate or moderate this relationship, such as attachment or abuse severity, but their role in the CSA and parenting stress relationship needs to be more fully explored in future research. Clinical implications arising from this review include the importance of training staff to ask about early life experiences in mothers who are struggling and the need to offer interventions to address parenting stress.

References

Note: * denotes those studies used in the systematic review.

Abidin, R. R. (1995). Parenting Stress Index, Third Edition: Professional Manual. Odessa, FL: Psychological Assessment Resources, Inc.

*Alexander, P. C., Teti, L., & Anderson, C. L. (2000). Childhood sexual abuse history and role reversal in parenting. *Child Abuse & Neglect*, 24(6), 829-838. doi: 10.1016/S0145-2134(00)00142-3

Ammerman, R. T., Shenk, C. E., Teeters, A. R., Noll, J. G., Putnam, F. W., & Van Ginkel, J. B. (2013). Multiple mediation of trauma and parenting stress in mothers in home visiting. *Infant Mental Health Journal*, 34(3), 234-241. doi: 10.1002/imhj.21383

Anthony, L. G., Anthony, B. J., Glanville, D. N., Naiman, D. Q., Waanders, C., & Shaffer, S. (2005). The relationships between parenting stress, parenting behaviour and preschoolers' social competence and behaviour problems in the classroom. *Infant and Child Development*, 14, 133-154. doi: 10.1002/icd.385

Armijo-Olivo, S., Stiles, C. R., Hagen, N. A., Biondo, P. D., & Cummings, G. C. (2012). Assessment of study quality for systematic reviews: A comparison of the Cochrane Collaboration Risk of Bias Tool and the Effective Public Health Practice Project Quality Assessment Tool: Methodological research. *Journal of Evaluation in Clinical Practice*, 18, 12-18. doi: 10.1111/j.1365-2753.2010.01516.x

*Barrett, B. (2009). The impact of childhood sexual abuse and other forms of childhood adversity on adulthood parenting. *Journal of Child Sexual Abuse*, 18(5), 489-512. doi: 10.1080/10538710903182628

- Barth, J., Bermetz, L., Heim, E., Trelle, S., & Tonia, T. (2013). The current prevalence of child sexual abuse worldwide: A systematic review and meta-analysis. *International Journal of Public Health*, 58, 469-483. doi: 10.1007/s00038-012-0426-1
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561-571. doi: 10.1001/archpsyc.1961.01710120031004
- Bennett, C., Barlow, J., Huband, N., Smailagic, N., & Roloff, V. (2013). Group-based parenting programs for improving parenting and psychosocial functioning: A systematic Review. *Journal of the Society for Social Work and Research*, 4(4), 300-332. doi: 10.5243/jsswr.2013.20
- Berlin, L. J., Appleyard, K., & Dodge, K. A. (2011). Intergenerational continuity in child maltreatment: Mediating mechanisms and implications for prevention. *Child Development*, 82(1), 162-176. doi: 10.1111/j.1467-8624.2010.01547.x
- Bernstein, D. P., and Fink, L. (1998). Childhood Trauma Questionnaire: A retrospective self-report manual. San Antonio, TX: The Psychological Corporation.
- Bert, S. C., Guner, B. M., & Lanzi, R. G. (2009). The influence of maternal history of abuse on parenting knowledge and behaviour. *Family Relations*, 58(2), 176-187. doi: 10.1111/j.1741-3729.2008.00545.x
- Bistricky, S. L., Atchley, R. A., Ingram, R., & O'Hare, A. (2014). Biased processing of sad faces: An ERP marker candidate for depression susceptibility. *Cognition and Emotion*, 28(3), 470-492. doi: 10.1080/02699931.2013.837815

- *Buist, A. & Janson, H. (2001). Childhood sexual abuse, parenting and postpartum depression– a 3-year follow-up study. *Child Abuse & Neglect*, 25(7), 909-921. doi:10.1016/S0145-2134(01)00246-0
- Caldwell, J. G., Shaver, P. R., Li, C., Minzenberg, M. J. (2011). Childhood maltreatment, adult attachment and depression as predictors of parental self-efficacy in at-risk mothers. *Journal of Aggression, Maltreatment & Trauma*, 20(6), 595-616. doi: 10.1080/10926771.2011.595763
- Coles, J., Lee, A., Taft, A., Mazza, D., & Loxton, D. (2015). Childhood sexual abuse and its association with adult physical and mental health: Results from a national cohort of young Australian women. *Journal of Interpersonal Violence*, 30(11), 1929-1944. doi: 10.1080/10926771.2011.595763
- Crnic, K. A., Gaze, C., & Hoffman, C. (2005). Cumulative parenting stress across the preschool period: Relations to maternal parenting and child behaviour at age 5. *Infant and Child Development*, 14, 117-132. doi: 10.1002/icd.384
- Deater-Deckard, K. (1998). Parenting stress and child adjustment: Some old hypotheses and new questions. *Clinical Psychology: Science and Practice*, 5(3), 314-332. doi: 10.1111/j.1468-2850.1998.tb00152.x
- Deater-Deckard, K. & Scarr, S. (1996). Parenting stress among the dual-earner mothers and fathers: Are there gender differences? *Journal of Family Psychology*, 10(1), 45-59. doi: 10.1037/0893-3200.10.1.45
- De Jong, R., Alink, L., Bijleveld, C., Finkenauer, C., & Hendriks, J. (2015). Transition to adulthood of child sexual abuse victims. *Aggression and Violent Behaviour*, 24, 175-187. doi: 10.1016/j.avb.2015.04.012

- DiLillo, D. & Damashek, A. (2003). Parenting characteristics of women reporting a history of childhood sexual abuse. *Child Maltreatment*, 8(4), 319-333. doi: 10.1177/107755950325710
- *Douglas, A. R. (2000). Reported anxieties concerning intimate parenting in women sexually abused as children. *Child Abuse & Neglect*, 24(3), 425-434. doi: 10.1016/S0145-2134(99)00154-4
- Epifanio, M. S., Genna, V., De Luca, C., Roccella, M., & La Grutta, S. (2015). Paternal and maternal transition to parenthood: The risk of postpartum depression and parenting stress. *Pediatric Reports*, 7(2), 38-44. doi: 10.4081/pr.2015.5872
- Essabar, L., Khalqallah, A., & Dakhama, B. S. B. (2015). Child sexual abuse: Report of 311 cases with review of literature. *The Pan African Medical Journal*, 20, 47-55. doi: 10.11604/pamj.2015.20.47.4569
- *Ethier, L. S., Lacharite, C., & Couture, G. (1995). Childhood adversity, parental stress, and depression of negligent mothers. *Child Abuse & Neglect*, 19(5), 619-632. doi: 10.1016/0145-2134(95)00020-9
- Feinberg, M. E., Jones, D. E., Kan, M. L., & Goslin, M. C. (2010). Effects of family foundations on parents and children: 3.5 years after baseline. *Journal of Family Psychology*, 24(5), 532-542. doi: 10.1037/a002083
- Fitzgerald, M. M., Shipman, K. L., Jackson, J. L., McMahon, R. J., & Hanley, H. M. (2005). Perceptions of parenting versus parent-child interactions among incest survivors. *Child Abuse & Neglect*, 29, 661-681. doi: 10.1016/j.chiabu.2004.10.012
- Fontes, L. A. & Plummer, C. (2010). Cultural issues in disclosures of child sexual abuse. *Journal of Child Sexual Abuse*, 19, 491-518. doi: 10.1080/10538712.2010.512520

- *Harmer, A. L. M., Sanderson, J., & Mertin, P. (1999). Influence of negative childhood experiences on psychological functioning, social support, and parenting for mothers recovering from addiction. *Child Abuse & Neglect*, 23(5), 421-433. doi: 10.1016/S0145-2134(99)00020-4
- Haugaard, J. J. (2000). The challenge of defining child sexual abuse. *American Psychologist*, 55(9), 1036-1039. doi: 10.1037/0003-066X.55.9.1036
- Hughes, M. & Cossar, J. (2015). The relationship between maternal childhood emotional abuse/neglect and parenting outcomes: A systematic review. *Child Abuse Review*, 25(1), 31-45. doi: 10.1002/car.2393
- Kwako, L. E., Noll, J. G., Putnam, F. W., & Trickett, P. K. (2010). Childhood sexual abuse and attachment: An intergenerational perspective. *Clinical Child Psychology and Psychiatry*, 15(3), 407-422. doi: 10.1177/1359104510367590
- Landolt, M. A., Schnyder, U., Maier, T., & Mohler-Kuo, M. (2016). The harm of contact and non-contact sexual abuse: Health-related quality of life and mental health in a population of Swiss adolescents. *Psychotherapy and Psychosomatics*, 85, 320-322. doi: 10.1159/000446810
- *Lang, A. J., Gartstein, M. A., Rodgers, C. S., & Lebeck, M. M. (2010). The impact of maternal childhood abuse on parenting and infant temperament. *Journal of Child and Adolescent Psychiatric Nursing*, 23(2), 100-110. doi: 10.1111/j.1744-6171.2010.00229.x
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gotzsche, P. C., Ioannidis, J. P. A., . . . Moher, D. (2009). The PRISMA Statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and

elaboration. *Journal of Clinical Epidemiology*, 62(10), e1-e34. doi:

0.1016/j.jclinepi.2009.06.006

*Lutenbacher, M. (2000). Perceptions of health status and the relationship with abuse history and mental health in low-income single mothers. *Journal of Family Nursing*, 6(4), 320-340. doi: 10.1177/10748070000600402

*Mapp, S. C. (2006). The effects of sexual abuse as a child on the risk of mothers physically abusing their children: A path analysis using systems theory. *Child Abuse & Neglect*, 30(11), 1293-1310. doi: 10.1016/j.chiabu.2006.05.006

Murphy, A., Steele, M., Dube, A. R., Bate, J., Bonuck, K., Meissner, P., ... Steele, H. (2014). Adverse Childhood Experiences (ACEs) Questionnaire and Adult Attachment Interview (AAI): Implications for parent child relationships. *Child Abuse & Neglect*, 38(2), 224-233. doi: 10.1016/j.chiabu.2013.09.004

*Pazdera, A. L., McWey, L. M., Mulli, A., & Carbonell, J. (2013). Child sexual abuse and the superfluous association with negative parenting outcomes: The role of symptoms as predictors. *Journal of Marital and Family Therapy*, 39(1), 98-111. doi: 10.1111/j.1752-0606.2011.00272.x

*Pereira, J., Vickers, K., Atkinson, L., Gonzalez, A., Wekerle, C., & Levitan, R. (2012). Parenting stress mediates between maternal maltreatment history and maternal sensitivity in a community sample. *Child Abuse & Neglect*, 36(5), 433-437. doi: 10.1016/j.chiabu.2012.01.006

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385-401. doi: 10.1177/014662167700100306

- Read, J. (2006). Breaking the silence: Learning how to ask about trauma and how to respond to disclosures. In W. Larkin & A. Morrison (Eds.), *Trauma and Psychosis*, (pp. 195-221). London: Routledge.
- Read, J., Hammersley, P., & Rudegeair, T. (2007). Why, when and how to ask about childhood abuse. *Advances in Psychiatric Treatment*, 13(2), 101-110. doi: 10.1192/apt.bp.106.00284
- *Renner, L. M., Whitney, S. D., & Easton, S. D. (2015). Profiles of self-reported parenting competence and stress among women with/without histories of childhood sexual abuse. *Journal of Child and Family Studies*, 24(3), 749-761. doi: 10.1007/s10826-013-9886-z
- Ruscio, A. M. (2001). Predicting the child-rearing practices of mothers sexually abused in childhood. *Child Abuse & Neglect*, 25(3), 369-387. doi: 10.1016/S0145-2134(00)00252-0
- Rutten, B. P. F., Hammels, C., Geschwind, N., Menne-Lothmann, C., Pishva, E., Schruers, K., ... Wichers, M. (2013). Resilience in mental health: Linking psychological and neurobiological perspectives. *Acta Psychiatrica Scandinavica*, 128(1), 3-20. doi: 10.1111/acps.12095
- Sachs-Ericsson, N., Gayman, M. D., Kendall-Tackett, K., Lloyd, D. A., Medley, A., Collins, N., ... Sawyer, K. (2010). The long-term impact of childhood abuse on internalising disorders among older adults: The moderating role of self-esteem. *Aging and Mental Health*, 14(4), 498-501. doi: 10.1080/13607860903191382

- Sanders, B., & Becker-Laussen, E. (1995). The measurement of psychological maltreatment: Early data on the child abuse and trauma scale. *Child Abuse & Neglect*, 19(3), 315-323. doi: 10.1016/S0145-2134(94)00131-6
- Scher, C. D., Stein, M. B., Asmundson, G. J. G., McCreary, D. R., & Forde, D. R. (2001). The Childhood Trauma Questionnaire in a community sample: Psychometric properties and normative data. *Journal of Traumatic Stress*, 14(4), 843-857. doi: 10.1023/A:1013058625719
- Schoedl, A. F., Costa, M. C. P., Mari, J. J., Mello, M. F., Tyrka, A. R., Carpenter, L. L., & Price, L. H. (2010). The clinical correlates of reported childhood sexual abuse: An association between age at trauma onset and severity of depression and PTSD in adults. *Journal of Child Sexual Abuse*, 19(2), 156-170. doi: 10.1080/10538711003615038
- Schuck, A. M. & Widom, C. S. (2001). Childhood victimisation and alcohol symptoms in females: Causal inferences and hypothesised mediators. *Child Abuse & Neglect*, 25(8), 1069-1092. doi: 10.1016/S0145-2134(01)00257-5
- *Schuetze, P. & Eiden, R. D. (2005). The relationship between sexual abuse during childhood and parenting outcomes: Modelling direct and indirect pathways. *Child Abuse & Neglect*, 29(6), 645-659. doi: 10.1016/j.chiabu.2004.11.004
- Seltmann, L. A. & Wright, M. O'D. (2013). Perceived parenting competencies following childhood sexual abuse: A moderated mediation analysis. *Journal of Family Violence*, 28(6), 611-621. doi: 10.1007/s10896-013-9522-0
- Soltis, K., Davidson, T. M., Moreland, A., Felton, J., & Dumas, J. E. (2015). Associations among parental stress, child competence, and school readiness: Findings from the

- PACE study. *Journal of Child and Family Studies*, 24(3), 649-657. doi: 10.1007/s10826-013-9875-2
- Teicher, M. H. & Samson, J. A. (2016). Annual research review: Enduring neurobiological effects of childhood abuse and neglect. *The Journal of Child Psychology and Psychiatry*, 57(3), 241-266. doi: 10.1111/jcpp.12507
- Thomas, B. H., Ciliska, D., Dobbins, M., & Micucci, S. (2004). A process for systematically reviewing the literature: Providing the research evidence for public health nursing interventions. *World Views on Evidence-Based Nursing*, 1(3), 176-184. doi: 10.1111/j.1524-475X.2004.04006.x
- Trickett, P. K., Noll, J. G., & Putnam, F. W. (2011). The impact of sexual abuse on female development: Lessons from a multigenerational, longitudinal research study. *Development and Psychopathology*, 23(2), 453-476. doi: 10.1017/S0954579411000174
- Vallotton, C., Harewood, T., Froyen, L., Brophy-Herb, H., & Ayoub, C. (2016). Child behaviour problems: Mothers' and fathers' mental health matters today and tomorrow. *Early Childhood Research Quarterly*, 37, 81-93. doi: 10.1016/j.ecresq.2016.02.006
- Wangel, A. M., Ryding, E. L., Schei, B., Ostman, M., & Lukasse, M. (2016). Emotional, physical, and sexual abuse and the association with symptoms of depression and posttraumatic stress in a multi-ethnic pregnant population in southern Sweden. *Sexual & Reproductive Healthcare*, 9, 7-13. doi: 10.1016/j.srhc.2016.04.003
- Webster-Stratton, C. (2006). *The Incredible Years: A Trouble-Shooting Guide for Parents of Children Aged 2-8 years*. Seattle, WA: The Incredible Years Press.

- Wohab, M. A. & Akhter, S. (2010). The effects of childhood sexual abuse on children's psychology and employment. *Procedia - Social and Behavioural Sciences*, 5, 144-149. doi: 10.1016/j.sbspro.2010.07.063
- Wosu, A. C., Gelaye, B., & Williams, M. A. (2015). History of childhood sexual abuse and risk of prenatal and postpartum depression or depressive symptoms: an epidemiologic review. *Archives of Women's Mental Health*, 18(5), 659-671. doi: 10.1007/s00737-015-0533-0
- *Wright, M. O., Fopma-Loy, J., & Fischer, S. (2005). Multidimensional assessment of resilience in mothers who are child sexual abuse survivors. *Child Abuse & Neglect*, 29(10), 1173-1193. doi: 10.1016/j.chiabu.2005.04.004
- Zajicek-Farber, M. L., Mayer, L. M., & Daughtery, L. G. (2012). Connections among parental mental health, stress, child routines, and early emotional behavioural regulation of preschool children in low-income families. *Journal of the Society for Social Work and Research*, 3(1), 31-50. doi: 10.5243/jsswr.2012.3
- Zvara, B. J., Mills-Koonce, W. R., Appleyard Carmody, K., & Cox, M. (2015). Childhood sexual trauma and subsequent parenting beliefs and behaviours. *Child Abuse & Neglect*, 44, 87-97. doi: 10.1016/j.chiabu.2015.01.012

Figures and Tables

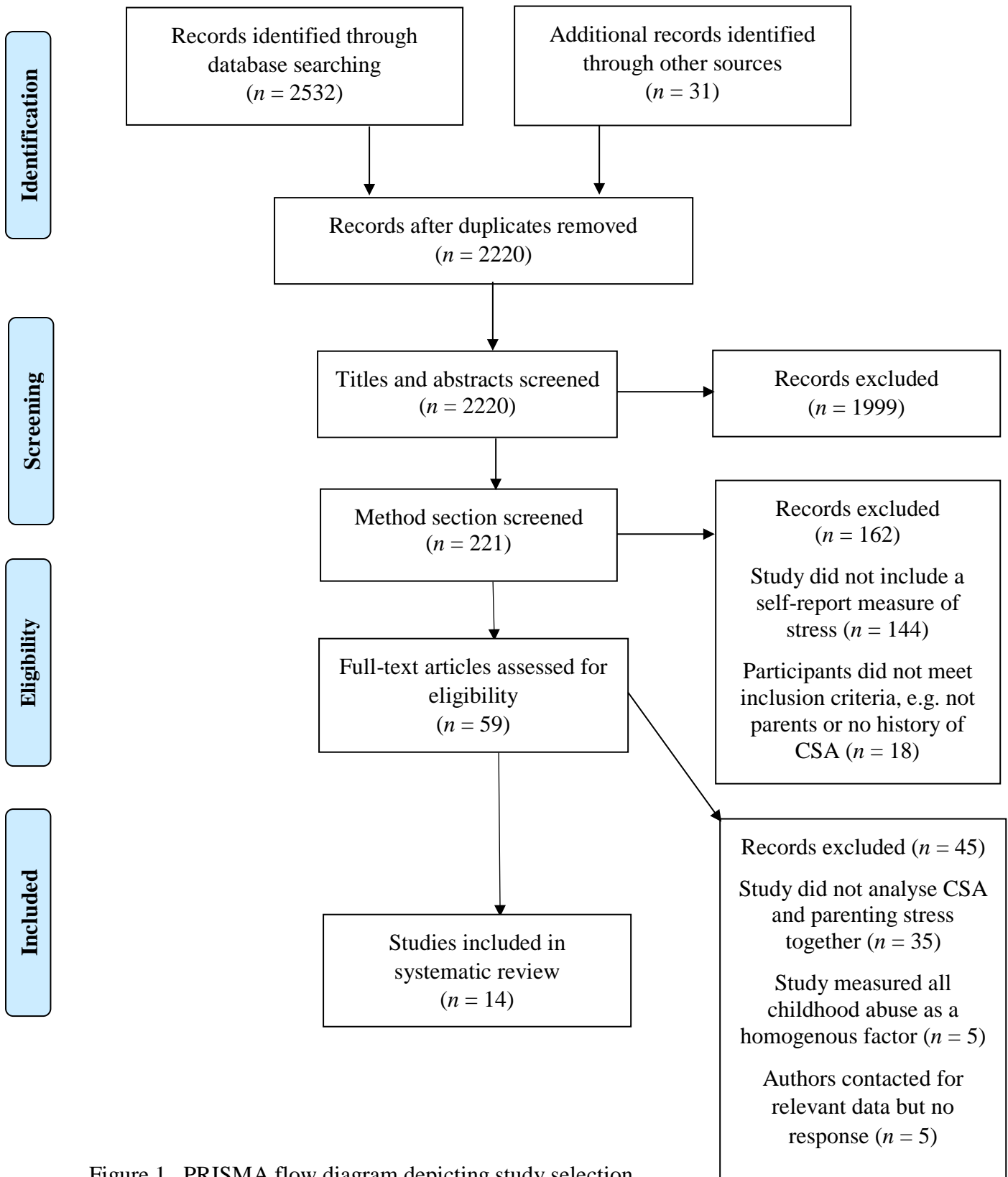


Figure 1. PRISMA flow diagram depicting study selection

Table 1. Demographic information from studies

Study	Study design	Country	Ethnicity	Participants	Type of sample	Mean age of mother
Alexander et al. (2000)	Cross-sectional	USA	80% Caucasian, 11.1% African-American, 8.9% Latina	90 mothers (19 (21%) reported CSA)	Community - response to advert	36.4
Barrett (2009)	Secondary data analysis from a panel (longitudinal) study	USA	Predominately African-American (82.7%)	483 mothers (54 (11%) reported CSA)	Community – benefit recipients	28.83
Buist & Janson (2001)	3 year prospective study	Australia	Not reported	45 mothers who had developed depression postpartum (23 (51%) reported CSA)	Clinical - mother & baby unit. Mothers diagnosed with either major depression or adjustment disorder	CSA group: 30.5 Control: 31.6
Douglas (2000)	Case-control	Scotland	Not reported	63 mothers (34 (54%) reported CSA)	Clinical – mental health out-patient clinic	CSA group: 31.7 Control: 35.8
Ethier et al. (1995)	Case-control	Canada (French speaking)	Not reported	80 mothers (40 ‘negligent’ & 40 control). Frequency of sexual abuse ‘events’ reported: 20 events reported	Neglecting mothers from Youth Protection Services, matched with controls from the community	28.6 (neglecting) 30.3 (control)

				in the negligent group, 14 in the control		
Harmer et al. (1999)	Cross-sectional	Australia	Predominately Anglo-Saxon, three mothers identified themselves as half native aboriginal	46 mothers recovering from drug or alcohol addiction (22 out of 39 (56%) who completed the CSA measure reported CSA)	Clinical (recovering addicts) residing at a therapeutic community	28.5
Lang et al. (2010)	Prospective: Time point 1 in early pregnancy, time point two when child was 12 months old	USA	61.4% Caucasian, 18.2% Hispanic, 11.4% African-American, 9.1% 'other'	44 mothers at time point one, 31 at time point two (70.4%). 20.4% reported moderate/severe CSA at time point one	Community - response to advert	29.27
Lutenbacher (2000)	Cross-sectional	USA	56% African-American, no other information given	59 low income mothers (9 reported CSA only, 11 (19%) reported a mixture of CSA and physical abuse)	Community - response to advert and approached by staff	26.1
*Mapp (2006)	Secondary data analysis from a cross-sectional prospective study between 1991 and 1998 (used data	USA	73% African-American, no other information given	265 (40.4% reported CSA)	Community – from a prenatal clinic	Not reported

	only from time point 2)					
*Pazdera et al. (2013)	Secondary data analysis from a cross-sectional prospective study between 1991 and 1998	USA	73% African-American, no other information given	265 mothers (number of CSA survivors not reported, but assumed to be 40.4% as above)	Community – from a prenatal clinic	Not reported
Pereira et al. (2012)	Cross-sectional	Canada	67.2% Caucasian, 13.2% Asian, 5.6% Hispanic, 3.8% mixed ethnicity, 2.8% African, 0.6% North American, 3.1% 'other'	291 mothers (50 (17%) reported CSA)	Community - response to advert and approached by staff	33.38
*Renner et al. (2015)	Secondary data analysis from a cross-sectional prospective study between 1991 and 1998	USA	73% African-American	264 mothers (107 (40.5%) CSA survivors), 1 excluded for excessive missing data	Community – from a prenatal clinic	26.98
*Schuetze & Eiden (2005)	Secondary data analysis from a cross-sectional prospective study between 1991 and 1998	USA	73% African-American, 27% Caucasian	263 mothers (107 (40.6%) reported CSA)	Community – from a prenatal clinic	26.99
Wright et al. (2005)	Cross-sectional	USA	96% Caucasian	79 mothers (all self-reported CSA)	Community - response to advert	38.2

Note: * = same primary data set used

Table 2. The measures used in each study, the type of data analysis and main results from each study.

Study	Measure of CSA	Measure of parental stress	Analysis	Result
Alexander et al. (2000)	Questions: When you were a child or adolescent, did anyone ever actually touch private parts of your body or make you touch theirs against your wishes or when you were asleep, drugged or in some other way helpless? Further questions were asked re age, frequency etc if answered yes to above	PSI-SF	Analysis of covariance – main & interactive effects of CSA & relationship satisfaction on parenting stress.	No main effect of CSA on parenting stress (no figures provided).
Barrett (2009)	2 questions: 1) Has a stranger, acquaintance, date or relative ever tried or succeeded in doing something sexual to you against your wishes? 2) How old were you the first time this happened?	A scale taken from a women's employment study which included items from the PSI	T-tests: Hierarchal multiple regression:	CSA mean stress score x Control mean stress score $t(481) = -1.02, p = .38$ (not sig). Cohen's $d = .15$. $\beta = -.01, p = .90$ (<i>ns</i>).
Buist & Janson (2001)	Abbreviated version of the Otago Women's Health Survey (Martin, Anderson, Roman, & O'Shea, 1993). Asks details of the abuse, age of onset, age and gender of perpetrator, relationship to perpetrator and whether the victim confided in anyone at the time, regarding the abuse.	PSI	Two sample t-tests	Means for index and comparison groups not significantly different on either parent or child domain of PSI BUT life stress

				subscale on PSI significantly higher in the index group ($p = <.05$). Cohen's $d = .65$ (medium effect).
Douglas (2000)	Survey of Sexual Abuse (Tsai, Feldman-Summers & Edgar, 1979). Definition of sexual abuse limited to physical contact abuse occurring before the age of 16.	PSI-SF	T-tests and correlations	CSA mean stress score x Control mean stress score $t(61) = 2.36, p = <.02$. Cohen's d could not be calculated.
Ethier et al. (1995)	Psychosocial interview (including questions about CSA)	PSI	Correlation	$r = .23$ (negligent, not sig). $r = .33$ (control, $p = <.01$).
Harmer et al. (1999)	The Child Abuse & Trauma Scale (CATS) – sexual abuse scale	PSI	Correlation	$r = .31$ (ns , but maternal depression & social support subscales deleted for correlations to minimise collinearity with other measures included in the study)
Lang et al. (2000)	CTQ	PSI-SF	Correlations and multiple regression	PSI Defensive Responding: $B = .12$ (ns). PSI Parental

				Distress: $B = .15$ (<i>ns</i>). PSI Dysfunctional Interaction: $B = .07$ (<i>ns</i>).
Lutenbacher (2000)	<p>Researcher questions:</p> <p>1) Mothers were asked whether, before age 18, they had ever been touched in a sexual way against their wishes</p> <p>Was this action violent? Y/N</p> <p>3 nominal categories: no SA, nonviolent SA and violent SA</p>	Everyday Stressors Index (ESI)	Correlation	$r = .22$ (<i>ns</i>).
*Mapp (2006)	An adapted version of the questionnaire in Russell (1983): At least one contact or non-contact episode prior to the age of 18 where the perpetrator was at least 5 years older than the women or where force was used.	PSI	Path analysis	$r = .14$ (<i>ns</i>).
*Pazdera et al. (2013)	An adapted version of the questionnaire in Russell (1983): At least one contact or non-contact episode prior to the age of 18 where the perpetrator was at least 5 years older than the women or where force was used.	PSI	Path analysis (mediation)	$r = -.07$ (<i>ns</i>).
Pereira et al. (2012)	CTQ	PSI-SF	Correlation & ordinary least squares regression with bootstrapping	$r = .13, p = <.05$
*Renner et al. (2015)	An adapted version of the questionnaire in Russell (1983): At least one contact or non-contact episode prior to the age of 18 where the perpetrator was at least 5 years	PSI Parent domain (5 of 7 subscales) PSI child domain	Latent Profile Analysis	CSA group reported higher mean scores on 5 PSI parent domain

	older than the women or where force was used.	(2 subscales only)		subscales. Cohen's $d = .22/.35/.37$ for health/social isolation/depression subscales respectively. Restriction of role and attachment subscale <i>ns</i> .
*Schuetze & Eiden (2005)	An adapted version of the questionnaire in Russell (1983): At least one contact or non-contact episode prior to the age of 18 where the perpetrator was at least 5 years older than the women or where force was used.	PSI	Structural Equation Modelling (SEM)	PSI Child Domain, $r = .02$ (<i>ns</i>). PSI Parent Domain, $r = .18, p = <.01$.
Wright et al. (2005)	Self-identification via a questionnaire, coded for severity by the researchers	PSI	Hierarchical regression analysis & mediator/moderator analysis	PSI Parent Domain mean scores markedly elevated on six of the seven subscales for CSA sample. PSI Child Domain x CSA severity, $r = .01$ (<i>ns</i>).

Note: * = same primary data set used

Abbreviations: CSA = Childhood sexual abuse; PSI-SF = Parental Stress Inventory – Short Form; PSI = Parental Stress Inventory; CTQ = Childhood Trauma Questionnaire

Table 3. Quality appraisal results using the EPHPP

Name of study	Selection bias	Study design	Confounders	Blinding	Data collection methods	Withdrawals and dropouts	Global rating
Alexander et al. (2000)	Weak	Weak	Weak	Moderate	Moderate	N/A	Weak
Barrett (2009)	Moderate	Moderate	Moderate	Moderate	Weak	Strong	Moderate
Buist & Janson (2001)	Moderate	Moderate	Weak	Strong	Moderate	Strong	Moderate
Douglas (2000)	Moderate	Moderate	Weak	Moderate	Moderate	Moderate	Moderate
Ethier et al. (1995)	Weak	Moderate	Moderate	Moderate	Moderate	Weak	Weak
Harmer et al. (1999)	Moderate	Weak	Weak	Moderate	Strong	N/A	Weak
Lang et al. (2010)	Weak	Moderate	Weak	Moderate	Strong	Moderate	Weak
Lutenbacher (2000)	Moderate	Weak	Weak	Moderate	Moderate	N/A	Weak
*Mapp (2006)	Moderate	Moderate	Weak	Moderate	Moderate	Moderate	Moderate
*Pazdera et al. (2013)	Moderate	Moderate	Weak	Moderate	Moderate	Moderate	Moderate
Pereira et al. (2012)	Moderate	Weak	Moderate	Moderate	Strong	N/A	Moderate
*Renner et al. (2015)	Moderate	Moderate	Weak	Moderate	Moderate	Moderate	Moderate
*Schuetze & Eiden (2005)	Moderate	Moderate	Weak	Moderate	Moderate	Moderate	Moderate
Wright et al. (2005)	Weak	Weak	Weak	Moderate	Moderate	N/A	Weak

Note: * = same primary data set used

Table 4. Definition of childhood sexual abuse in each study

Study	Definition of CSA
Alexander et al. (2000)	Unwanted sexual touching by someone who was at least 5 years older than the child or who had used threat or force.
Barrett (2009)	As part of the measure: Has a stranger, acquaintance, date or relative ever tried or succeeded in doing something sexual to you against your wishes?
Buist & Janson (2001)	Not defined – refers to the measure (Otago Women's Health Survey) which asks details of the abuse
Douglas (2000)	Women with a history of contact child sexual abuse before the age of 16
Ethier et al. (1995)	Not defined – uses a psychosocial interview to determine presence of CSA
Harmer et al. (1999)	Defined through use of standardised measure (CATS)
Lang et al. (2010)	Defined through use of standardised measure (CTQ)
Lutenbacher (2000)	Not defined – uses idiosyncratic questions i.e. has it happened, was it violent
*Mapp (2006)	Original researcher defined CSA as at least one contact or non-contact episode prior to the age of 18 where the perpetrator was at least 5 years older than the women or where force was used
*Pazdera et al. (2013)	Original researcher defined CSA as at least one contact or non-contact episode prior to the age of 18 where the perpetrator was at least 5 years older than the women or where force was used
Pereira et al. (2012)	Defined through use of standardised measure (CTQ)
*Renner et al. (2013)	Original researcher defined CSA as at least one contact or non-contact episode prior to the age of 18 where the perpetrator was at least 5 years older than the women or where force was used
*Schuetze & Eiden (2005)	Original researcher defined CSA as at least one contact or non-contact episode prior to the age of 18 where the perpetrator was at least 5 years older than the women or where force was used
Wright et al. 2005	Self-identification, coded for severity by researchers

Note: * = same primary data set used

Abbreviations: CATS = Child Abuse & Trauma Scale; CTQ = Childhood Trauma Questionnaire

Table 5. Reported correlations between CSA, depression and parental stress for the studies exploring the associations between these variables

Study	CSA association with depression	Depression measure	Depression association with parental stress	Parental stress measure
Buist & Janson (2001)	$M = 9.4, p = .05$ $M = 13.2 (ns)$	HDRS BDI	$M = 101.3$	PSI: Child Domain
			$M = 146.5$	Parent Domain
			$M = 16.9, p = .05$	Life Stress
Douglas (2000)	$Z = -4.436, p < .001$	GHQ-28	$r = .403, p = .05$	PSI-SF: CSA group
			$r = .376, p = .05$	Comparison group
Ethier et al. (1995)	$r = .27, p = .05$	BDI	$r = .62, p = > .001$	PSI
Harmer et al. (1999)	$r = .16 (ns)$	CES-D	$r = .68, p < .001$	PSI
Lang et al. (2010)	$r = .07 (ns)$	BDI-II	$B = -.92, p = .01$	PSI-SF: Defensive resp.
			$B = -.79, p = .05$	Parental distress
			$B = .52 (ns)$	Dys. interaction
Lutenbacher (2000)	$r = .49, p < .001$	CES-D	$r = .62, p < .001$	ESI
*Mapp (2006)	$r = .13$ (small effect)	CES-D	$r = .54$ (medium effect)	PSI
*Pazdera et al. (2013)	$r = .12, p = .05$	CES-D	$r = .38, p = .01$	PSI
*Schuetze & Eiden (2005)	$\beta = .13, p = .05$	CES-D	$r = .40, p = .05$	PSI: Child Domain
			$r = .48, p = .05$	Parent Domain
Wright et al. (2005)	$r = .25, p = .05$	CES-D	$r = -.01 (ns)$	PSI Child Domain
			$r = .62, p = .05$	PSI Parent Domain: Physical health
			$r = .52, p = .05$	Parental competence
			$r = .30, p = .05$	Spousal support

Note: * = same primary data set used

Abbreviations: HDRS = Hamilton Depression Rating Scale; BDI = Beck Depression Inventory; GHQ-28 = General Health Questionnaire-28; CES-D = Center for Epidemiologic Studies - Depression Scale; PSI = Parental Stress Inventory; PSI-SF = Parental Stress Inventory – Short Form; ESI = Everyday Stressors Index

Appendices

Appendix A: Quality Appraisal Tool



COMPONENT RATINGS

A) SELECTION BIAS

(Q1) Are the individuals selected to participate in the study likely to be representative of the target population?

- 1 Very likely
- 2 Somewhat likely
- 3 Not likely
- 4 Can't tell

(Q2) What percentage of selected individuals agreed to participate?

- 1 80-100% agreement
- 2 60-79% agreement
- 3 less than 60% agreement
- 4 Not applicable
- 5 Can't tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

B) STUDY DESIGN

Indicate the study design

- 1 Randomized controlled trial
- 2 Controlled clinical trial
- 3 Cohort analytic (two group pre + post)
- 4 Case-control
- 5 Cohort (one group pre + post (before and after))
- 6 Interrupted time series
- 7 Other specify
- 8 Can't tell

Was the study described as randomized? If NO, go to Component C.

No Yes

If Yes, was the method of randomization described? (See dictionary)

No Yes

If Yes, was the method appropriate? (See dictionary)

No Yes

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

C) CONFOUNDERS**(Q1) Were there important differences between groups prior to the intervention?**

- 1 Yes
- 2 No
- 3 Can't tell

The following are examples of confounders:

- 1 Race
- 2 Sex
- 3 Marital status/family
- 4 Age
- 5 SES (income or class)
- 6 Education
- 7 Health status
- 8 Pre-intervention score on outcome measure

(Q2) If yes, indicate the percentage of relevant confounders that were controlled (either in the design (e.g. stratification, matching) or analysis)?

- 1 80 – 100% (most)
- 2 60 – 79% (some)
- 3 Less than 60% (few or none)
- 4 Can't Tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

D) BLINDING**(Q1) Was (were) the outcome assessor(s) aware of the intervention or exposure status of participants?**

- 1 Yes
- 2 No
- 3 Can't tell

(Q2) Were the study participants aware of the research question?

- 1 Yes
- 2 No
- 3 Can't tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

E) DATA COLLECTION METHODS**(Q1) Were data collection tools shown to be valid?**

- 1 Yes
- 2 No
- 3 Can't tell

(Q2) Were data collection tools shown to be reliable?

- 1 Yes
- 2 No
- 3 Can't tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

F) WITHDRAWALS AND DROP-OUTS**(Q1) Were withdrawals and drop-outs reported in terms of numbers and/or reasons per group?**

- 1 Yes
- 2 No
- 3 Can't tell
- 4 Not Applicable (i.e. one time surveys or interviews)

(Q2) Indicate the percentage of participants completing the study. (If the percentage differs by groups, record the lowest).

- 1 80 -100%
- 2 60 - 79%
- 3 less than 60%
- 4 Can't tell
- 5 Not Applicable (i.e. Retrospective case-control)

RATE THIS SECTION	STRONG	MODERATE	WEAK	
See dictionary	1	2	3	Not Applicable

G) INTERVENTION INTEGRITY**(Q1) What percentage of participants received the allocated intervention or exposure of interest?**

- 1 80 -100%
- 2 60 - 79%
- 3 less than 60%
- 4 Can't tell

(Q2) Was the consistency of the intervention measured?

- 1 Yes
- 2 No
- 3 Can't tell

(Q3) Is it likely that subjects received an unintended intervention (contamination or co-intervention) that may influence the results?

- 4 Yes
- 5 No
- 6 Can't tell

H) ANALYSES**(Q1) Indicate the unit of allocation (circle one)**

community organization/institution practice/office individual

(Q2) Indicate the unit of analysis (circle one)

community organization/institution practice/office individual

(Q3) Are the statistical methods appropriate for the study design?

- 1 Yes
- 2 No
- 3 Can't tell

(Q4) Is the analysis performed by intervention allocation status (i.e. intention to treat) rather than the actual intervention received?

- 1 Yes
- 2 No
- 3 Can't tell

GLOBAL RATING**COMPONENT RATINGS**

Please transcribe the information from the gray boxes on pages 1-4 onto this page. See dictionary on how to rate this section.

A	SELECTION BIAS	STRONG	MODERATE	WEAK
		1	2	3
B	STUDY DESIGN	STRONG	MODERATE	WEAK
		1	2	3
C	CONFOUNDERS	STRONG	MODERATE	WEAK
		1	2	3
D	BLINDING	STRONG	MODERATE	WEAK
		1	2	3
E	DATA COLLECTION METHOD			
		1	2	3
F	WITHDRAWALS AND DROPOUTS	STRONG	MODERATE	WEAK
		1	2	3
				Not Applicable

GLOBAL RATING FOR THIS PAPER (circle one):

- | | | |
|---|----------|----------------------------|
| 1 | STRONG | (no WEAK ratings) |
| 2 | MODERATE | (one WEAK rating) |
| 3 | WEAK | (two or more WEAK ratings) |

With both reviewers discussing the ratings:

Is there a discrepancy between the two reviewers with respect to the component (A-F) ratings?

No Yes

If yes, indicate the reason for the discrepancy

- | | |
|---|---|
| 1 | Oversight |
| 2 | Differences in interpretation of criteria |
| 3 | Differences in interpretation of study |

Final decision of both reviewers (circle one):

- | | |
|---|----------|
| 1 | STRONG |
| 2 | MODERATE |
| 3 | WEAK |

Appendix B: Journal Instructions for Authors

Archives of Women's Mental Health

Medicine - Psychiatry | Archives of Women's Mental Health – incl. option to publish open access

Home > Medicine > Psychiatry

SUBDISCIPLINES JOURNALS BOOKS SERIES REFERENCE WORKS

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Archives of Women's Mental Health

Instructions for Authors

TYPES OF PAPERS

Original Contributions / Research Articles

Original Contributions / Research Articles should be arranged under the following headings:

Abstract:

Not to exceed 150–200 words

Keywords:

Not more than five

Word limit:

There is no word limit for Original Contributions.

Introduction:

To include the background literature as well as the objective(s) of the study

Materials and Methods:

Describe the basic study design. State the setting (e.g., primary care, referral center). Explain selection of study subjects and state the system of diagnostic criteria used. Describe any interventions and include their duration and method of administration. Indicate the main outcome measure(s). Specify the dates in which data were collected (month/year to month/year).

Results:

Include the key findings. Give specific data and their statistical significance, if possible (include p value if findings were significant). Subset Ns should accompany percentages if the total N is <100 Discussion and Conclusion. sections conforming to standard scientific reporting style.

Discussion and Conclusion

Sections conform to standard scientific reporting style

Reviews

Reviews are intended to draw together important information from recent publications on subjects of broad interest. They are meant to provide a venue for critical examination and considered opinion of such information.

Reviews are not meant to be encyclopedic and should not exceed 20 pages when typed. Reviews may contain figures and tables. References should be cited in the same way as in full-length articles.

Reviews should be comprehensive, fully referenced expositions of subjects of general interest, including background information and detailed critical analyses of current work in the field and its significance. They should be designed to serve as source materials.

Short Communications

Short Communications should be prepared as described above except for the following:

The average length of Short Communications should not exceed 1500 words and may include a maximum of two figures or tables and up to 12 references. The summary should not exceed 80 words. Short Communications can only be accepted or rejected.

Letters to the Editor

Letters to the Editor should be a maximum of 750 words and may include one table or figure and up to five references.

MANUSCRIPT SUBMISSION

Manuscript Submission

Submission of a manuscript implies: that the work described has not been published before; that it is not under consideration for publication anywhere else; that its publication has been

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Please follow the hyperlink “Submit online” on the right and upload all of your manuscript files following the instructions given on the screen.

Reviewer suggestions

Authors will be kindly asked to suggest up to 5 potential reviewers for their papers. These recommendations will be of help to ensure the journal’s high scientific level and will support a quick review process and thus shorten the time from manuscript submission to publication. Please note that only reviewer suggestions from institutions of international reputation other than the institution of the corresponding author will be taken into consideration, otherwise your paper can not be considered for further handling.

TITLE PAGE

The title page should include:

The name(s) of the author(s)

A concise and informative title

The affiliation(s) and address(es) of the author(s)

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Abstract

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Chapter 2: Empirical Paper

Investigation of Associations between Attachment, Parenting and Schizotypy in an Analogue

Sample over the 12-month postpartum period

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Division of Health Research

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Prepared for submission to The British Journal of Psychology

Abstract

Aim: Parenting can be a stressful experience particularly for people with mental health problems or people who experienced abuse or attachment difficulties in their own childhoods. This study examined the relationships between earlier trauma, attachment, parenting and schizotypy in a non-clinical sample, with the specific hypothesis that parenting stress and competence would mediate any association between trauma, attachment and schizotypy.

Method: One hundred and thirty-four first time parents with a child under 12 months old completed the following questionnaires online: the Experiences of Close Relationships Scale – Short Form (ECR-S), the Schizotypal Personality Questionnaire – Brief, Revised (SPQ-BR) the Parenting Stress Scale, the Parenting Sense of Competence Scale (PSOC) and the Adverse Childhood Experiences (ACE) Questionnaire.

Results: Parenting stress was found to mediate the association between attachment and schizotypy, though parenting competence did not have a significant effect as a mediator in a parallel model. Childhood trauma was associated with attachment and schizotypy but did not correlate with the parenting variables.

Implications: The study adds to the understanding of what may exacerbate schizotypal symptoms in the first 12 months postpartum as parental attachment insecurity and parental stress together predicted elevated self-reported experiences of schizotypal symptoms in this period. These findings warrant replication in clinical samples with psychosis.

Keywords: Attachment; Parenting; Schizotypy; Parenting stress

Introduction

Recent literature has conceptualised psychosis as being on a continuum, with disorder level clinical psychosis at one extreme and experiences of psychosis that are transitory and sub-clinical at the other, namely schizotypy (Barrantes-Vidal, Grant & Kwapil, 2015; Nelson, Seal, Pantelis & Phillips 2013). Schizotypy and psychosis share many characteristics, with a factor analysis suggesting conceptual models of three factors for both schizotypy and psychosis, including positive, negative and disorganised aspects (Wuthrich & Bates, 2006). Barrantes-Vidal et al. (2013) advocate the study of schizotypy to facilitate understanding of the development and aetiology of clinical level psychosis. Investigating schizotypy may also contribute to the identification of protective factors, as the presence of schizotypy does not necessarily lead to the development of clinical symptoms (Debbane et al., 2015). , Furthermore, research into schizotypy may facilitate a clearer understanding of the aetiology and trajectory of psychosis without debilitating extraneous variables being present, such as distress, hospitalisation and medication effects (Lenzenweger, 2015) which may be present in clinical level psychosis.

The aetiology of psychosis and schizotypy is multifaceted and includes possible genetic factors (Linney et al., 2003), early-life characteristics (e.g. low birth weight; Lahti et al. 2009) and environmental factors (Van Os, Kenis, & Rutten, 2010). It is now well established that early relational trauma, such as sexual, physical and emotional abuse has a significant role in the development of psychosis and schizotypy (Velikonja, Fisher, Mason and Johnson, 2015). More recently, an increasing number of studies are looking at how subtler relational traumas, such as attachment difficulties and neglect in the context of earlier caregiving relationships may be associated with psychosis. Attachment theory was originally introduced by Bowlby (1969) who posited that children develop internal working models of the self and others through early relationships with caregivers. These internal working

models persist throughout adulthood. Infants form secure attachments when their caregiver is consistently sensitive and appropriately responsive to their needs and the attachment figure represents a secure base for children to begin to explore the world around them. Problems arise when these conditions are not met and the care received in childhood is considered suboptimal (Fraley, Roisman, Booth-LaForce, Owen, & Holland, 2013). Attachment styles are relevant throughout the life span (Hazan & Shaver, 1987) and attachment in adulthood is conceptualised as a two-dimensional construct (Mikulincer & Shaver, 2003). These dimensions are named attachment anxiety and attachment avoidance in current literature with individuals who score highly on anxiety and/or avoidance on self-reported measures of attachment considered to have insecure attachment styles.

Attachment anxiety refers to the desire for close relationships but an inability to be content, consistently seeking reassurance of care and a hypersensitivity to perceived rejection. In contrast, attachment avoidance is the tendency towards self-reliance and defensiveness, and individuals may resist becoming too close to others as this causes discomfort (Shaver & Mikulincer, 2007). Insecure attachment is considered to have potentially wide-ranging effects with studies linking insecure attachment with mental health outcomes (Morley & Moran, 2011) and personality difficulties (Fossati et al., 2003). Specifically, associations have been found between insecure attachment styles and the later development of psychosis, for example Korver-Nieberg, Berry, Meijer & De Haan (2014) systematically reviewed studies concerning attachment and psychotic phenomenology in both clinical and non-clinical samples. They found that high levels of attachment anxiety and attachment avoidance were associated with increased reports of psychotic phenomenology in both types of sample.

Research is now beginning to explore the underlying mechanisms that explain the association between insecure attachment and schizotypy/psychosis. One possibility is that insecure attachment is associated with difficulties in regulating affect and possibly negative beliefs about others and the self in relation to others (Mikulincer & Shaver, 2005), which are both key triggers for psychosis (Harder & Folke, 2012). One life event that can be highly stressful and may be particularly pertinent for those with attachment difficulties and earlier trauma/neglect is becoming a parent for the first time. The transition to parenthood activates the caregiving system (Jones, Cassidy and Shaver, 2015a) and this caregiving system would ideally work in synchrony with the child's attachment system. However, parents with insecure attachment styles may be more susceptible to activation of their attachment system, for example from perceived threats or stress, resulting in reduced activation of their caregiving system and thus their abilities to care for their children. Jones, Cassidy and Shaver (2015b) conducted a thorough review of research regarding self-reported attachment styles and parenting and their findings indicate that insecure attachment is associated with more negative parenting behaviours, emotions and cognitions. For instance, lower parental responsiveness and support, more punitive approaches to discipline and an increase in parenting stress.

The postpartum period is acknowledged to be a vulnerable period for new mothers to develop mental health difficulties (Murray, Cooper & Hipwell, 2003) and research has consistently demonstrated that parental mental health difficulties may compromise the ability to parent effectively. For instance, a systematic review by Davidsen, Harder, MacBeth, Lundy and Gumley (2015) concluded there was evidence that mothers with schizophrenia differed in their maternal behaviour compared to controls, for example in reduced contact with their child and increased tension. They noted that most studies regarding the effects of mothers with psychosis take place within the first 12 months after the birth of their child.

Ammerman et al. (2013) suggest that parenting stress is especially likely during the first year for new parents as they adjust to the unfamiliar demands of raising an infant and increased stress has been shown to decrease parenting self-efficacy and perceived competence (Leahy-Warren & McCarthy, 2011).

Schizotypal experiences in a non-clinical population may also be experienced as stressful and as parenting stress is linked to poorer parent-child relationships and outcomes for the child (Neece, Green, & Baker, 2012), the current study is a worthy investigation. The conceptualisation of psychosis on a continuum means that analogue samples can provide a convenient preliminary test of models which may subsequently be tested in a clinical population, for example women with postpartum psychosis (PPP) or individuals with established psychosis who become parents, but these populations are notoriously difficult to recruit. Therefore a non-clinical sample was utilised for the current study. The specific aim of the current study is to explore associations between earlier trauma, attachment, parenting and schizotypy in first time parents with a child under 12 months. The specific hypotheses to be tested are grouped into three sets: (Set H1) there will be a positive association between schizotypy and attachment anxiety, attachment avoidance and childhood trauma, (Set H2) there will be a positive association between parenting stress and attachment anxiety, attachment avoidance and trauma, but a negative association between parenting competence, attachment anxiety/avoidance and trauma, (Set H3) there will be a positive association between parenting stress and schizotypy and a negative association between parenting competence and schizotypy. Finally, exploratory analyses will test whether parenting variables mediate any associations between schizotypy and earlier relational experiences (trauma and attachment).

Method

The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE, Von Elm et al., 2007) Statement's guidelines were followed to report this study.

Design

The current study is an online survey utilising a cross-sectional design which recruited participants between 15 February 2016 and 15 May 2016.

Ethics

Ethical approval for the study was obtained from Lancaster University Research Ethics Committee. All participants completed a consent form before gaining access to the study.

Measures

Demographics questionnaire: Participants completed a questionnaire asking for personal information including age, gender, age and gender of their child, nationality and any prior mental health conditions. This information was to aid in the control of confounding variables during the analyses.

Schizotypal Personality Questionnaire – Brief Revised (SPQ-BR) (Cohen, Matthews, Najolia, & Brown, 2010): The SPQ-BR is a 32-item scale used to assess schizotypal traits organised into seven trait subscales: 1) odd beliefs or magical thinking, 2) unusual perceptual experiences, 3) excessive social anxiety, 4) odd or eccentric behaviour, 5) odd speech, 6) no close friends and constricted affect, and 7) ideas of reference and suspiciousness. Participants are asked to indicate their level of agreement with each item on a five-point scale from 0: strongly disagree to 4: strongly agree. Internal reliability is previously reported to be 'robust' with a mean alpha coefficient of .91 (Callaway, Cohen, Matthews, & Dinzeo, 2014).

In the present study reliability for the full scale was also excellent with a Cronbach's Alpha coefficient of .94.

Adverse Childhood Experiences Questionnaire (ACE) (Felitti et al, 1998): This 10-item screening questionnaire was initially developed within the Felitti et al. (1998) study to ascertain presence of trauma before the age of 18 years. The World Health Organisation have recently developed a lengthier version intended to measure ACE's in all countries and explore associations with subsequent risk behaviours. Participants can score between 0 and 10 depending on how many traumas they indicate they have experienced.

Experiences of Close Relationships Scale-Short Form (ECR-S) (Wei, Russell, Mallinckrodt, & Vogel, 2007): The ECR-S is a 12-item scale used to measure adult attachment, with six items measuring attachment anxiety and six items measuring attachment avoidance. Participants are asked to indicate their level of agreement with each item on a seven-point scale from 1: strongly disagree to 7: strongly agree. Wei et al. (2007) reported reliability as good with coefficient alpha levels of .78 for the anxiety subscale and .84 for the avoidance subscale. In the current study reliability was adequate with .70 for the anxiety subscale and .79 for the avoidance subscale.

Parental Stress Scale (Berry & Jones, 1995): This scale was developed as an alternative to the 101-item Parenting Stress Index. The items represent both positive and negative themes of parenthood. Parents indicate their level of agreement with 18 items on a five-point scale from 1: strongly disagree to 5: strongly agree. Initial reliability was reported as good with a coefficient alpha level of .83 and reliability in the current study was also good ($\alpha = .80$).

Parenting Sense of Competence Scale (PSOC) (Gibaud-Wallston & Wandersman, 1978, in Johnston & Mash, 1989): The PSOC is a 16-item scale that measures parents' sense

of confidence and satisfaction with their parenting. Parents are asked to indicate their level of agreement with each item on a six-point scale from 1: strongly agree to 6: strongly disagree. Internal consistency has been reported as good in previous studies ranging from .75-.88 (Gilmore & Cuskelly, 2008) with reliability in the present study calculated as very good ($\alpha = .86$).

Procedure

Recruitment for this study took place online and through displaying posters advertising the study in children's centres, which directed participants to the online study. Several websites aimed at new parents were emailed requesting a link to the survey was placed within their website or social media posts. Websites contacted include netmums, bounty, babycentre, mother & baby, mumsnet, gurgle and new parent. Where possible an advert for the study was placed in the forum page of each website. Social media platforms, for example Twitter, were also used via accounts held by the Doctorate in Clinical Psychology and the Division of Health Research. For recruitment purposes, the study was titled 'What affects the experience of parenting?' The advert included a link to the study which first presented the participant information sheet (PIS; see Appendix A) which explained in lay terms why the study was being conducted and the aims of the study. Participants then clicked a 'next' button which presented the consent form. Once consent was indicated, participants accessed the study and were presented with the measures.

A debrief sheet (Appendix B) was presented at the end of the study containing further relevant details about the study and contact details of organisations participants may contact if they require support. Participants were also offered the option to receive a summary of the study and to be entered into a prize draw to win a £50 Amazon voucher. The full research protocol can be viewed in Appendix C.

Participants

Inclusion/exclusion criteria. Participants were considered eligible for inclusion in the study if they were a first-time primary caregiver of a child under the age of 12 months. The term ‘primary care-giver’ was used to encompass all those who may provide the main care for a new born infant, including fathers. Participants self-defined themselves as a primary care-giver to take part in the study.

A total of 182 participants accessed the online study, though of these 134 provided useable data. Appendix D shows a flow chart depicting the exclusion of participants at each stage and the reasons for the exclusions.

Data Analysis

A mean effect size was calculated using previous research in this area which indicated that we would find effect sizes in the region of .3 (e.g. Berant, Mikulincer, & Florian, 2001; Berry, Band, Corcoran, Barrowclough, & Wearden, 2007; Calvo & Bianco, 2015; Kohlhoff & Barnett, 2013; Rholes, Simpson, & Friedman, 2006; & Wickham, Sitko, & Bentall, 2015; see Appendix E). This effect size would mean that a sample of 82 would give us 80% power to detect significant effects using the conventional alpha level of 0.05 (Field, 2014).

Statistical analyses. Correlational analysis was used to test the bivariate associations between the key variables (schizotypy, attachment, parenting stress, parenting sense of competence and trauma). Independent t-tests examined for differences on categorical demographic data. Demographic data found to exert effects on outcome variables were controlled for in the mediation analyses and compared with the same analyses without control of these covariates. Mediation analysis used the PROCESS macro (Hayes, 2016) for SPSS which follows the Preacher and Hayes (2004) approach by calculating regression coefficients between each variable in the model along with mediation effects. Parenting stress and

competence were tested as mediators of the relationship between attachment and schizotypy (see Figure 1). Confidence intervals and standard errors used to assess significance were bias corrected and bootstrapped using 5000 samples. All analyses were carried out using IBM SPSS v22.

[INSERT FIGURE 1]

Missing data. Eleven participants had some data missing: Seven participants did not complete any of the final measure in the battery which was the ACE questionnaire and two of these participants also did not complete any of the SPQ-BR. Four participants missed more than 10% of the questions in the SPQ-BR (between 12.5% and 65.6%) so total scores were not calculated. Additionally, four participants missed one question each in different measures: two missed one question each in the PSOC (6% of the measure), one missed one question in the ECR-S (8%) and one missed one question in the SPQ-BR (3%). However, Little MCAR's test confirmed this data was missing completely at random ($\chi^2 (7, N = 134) = 3.274, p = .859$), so the missing data points were imputed and the measures for these four participants were retained in the analyses.

Results

Sample characteristics. Demographic data for all participants and descriptive statistics for all measures are presented in Table 1.

[INSERT TABLE 1]

Several significant differences were found in the scores on the measure of schizotypy (SPQ-BR) for gender of participant ($t(126) = 2.89, p = .01$), employment status ($t(126) = -3.43, p = .001$), previous diagnosis of a mental health condition ($t(126) = 4.53, p = .001$) and prior contact with mental health services ($t(126) = 2.26, p = .03$). Men scored higher than women and unemployed participants scored higher than employed participants. Those participants who reported a previous diagnosis of a mental health condition scored higher than those who did not and similarly, participants with previous mental health service contact scored higher than those who have not had contact. These demographic variables were controlled for in the mediation analyses, in which the SPQ-BR was the outcome variable.

Correlation analyses. Table 2 displays the correlation coefficients between the main variables. As hypothesised (Set H1), there was a positive association between schizotypy and attachment anxiety, attachment avoidance and childhood trauma. Secondly, there was a positive association between parenting stress and attachment anxiety/attachment avoidance and a negative association between parenting competence, attachment anxiety/avoidance, but the correlation between trauma and the parenting variables were not significant (Set H2). Thirdly, as hypothesised (Set H3), there was a positive association between parenting stress and schizotypy and a negative association between parenting competence and schizotypy.

[INSERT TABLE 2]

Mediation analyses. Exploratory analyses of the relationships between attachment, parenting and schizotypy was conducted to determine if there were any mediation effects. Trauma was not included in the mediation analyses as no significant association was found with the parenting variables in the correlational analyses. Mediation model one used attachment anxiety as the predictor variable and model 2 used attachment avoidance as the predictor variable. Figures 2 and 3 show diagrammatic representations of these relationships. Regression analyses as part of the parallel, multiple mediation model indicated that relationships between all variables were significant (see Table 3) except between parenting competence and schizotypy. However, a mediation model with parenting competence as a single mediator indicated that there was a negative association between parenting competence and schizotypy ($b = -.45$, $t(125) = -2.70$, 95% CI $[-.78, -.12]$) with a specific indirect effect of $b = .30$, 95% CI $[.11, .59]$. Hayes (2013) suggests different effects may be noted in parallel, multiple mediations as a specific indirect effect is calculated while “controlling for all other mediators in the model” (p. 129). Parenting stress and competence share a significant proportion of variance ($R^2 = .63$) so it may be assumed the competence variable is ineffective in the parallel mediation model because stress is a stronger variable. The results reported here, in Table 3, Table 4 and in Figures 2 and 3 are from the parallel mediation model. This analysis indicates a positive indirect effect of attachment anxiety on schizotypy through parenting stress ($b = .36$, 95% CI $[.07, .80]$) with both predictors accounting for 28% of the variance in schizotypy ($R^2 = .28$). The effect size (ab : $b = .11$) was medium (Cohen, 1988) and the confidence interval was entirely above zero (95% CI $[.02, .23]$, see Figure 2 and Tables 3 and 4). A similar effect was found for attachment avoidance (see Figure 3 and Tables 3 and 4). There was a positive indirect effect of attachment avoidance on schizotypy through parenting stress ($b = .37$, 95% CI $[.04, .92]$) with both predictors accounting for 27% of the variance in schizotypy ($R^2 = .27$). Again, the effect size (ab : $b = .10$) was medium

(Cohen, 1988) and the confidence interval was entirely above zero (95% CI [.01, .23]).

These results suggest that participants scoring higher on either attachment anxiety or avoidance also scored higher on parenting stress and schizotypy.

[INSERT FIGURE 2]

[INSERT FIGURE 3]

[INSERT TABLE 3]

[INSERT TABLE 4]

These mediation models were re-tested controlling for the relevant demographic variables found to exert effects on schizotypy, namely gender of participant, employment status, previous diagnosis of a mental health condition and prior contact with mental health services. Figures 4 and 5 depict diagrammatic representations of these models. The results found largely replicate those reported in figures 2 and 3, though it was noted that the variance accounted for in schizotypy increased from a total of .28 (attachment anxiety, parenting stress and competence) to .44 when the covariates were added to the model. The same was noted for the attachment avoidance model ($R^2 = .27$ to .46 respectively). As there were so few male participants ($n = 8$), gender of participant was removed from the covariates and the model was re-tested. Results differed minimally from those already reported, though the variance accounted for in schizotypy in model 1 (attachment anxiety) reduced to .40 and in model 2 (attachment avoidance) it reduced to .43.

[INSERT FIGURE 4]

[INSERT FIGURE 5]

The power of the mediation models for the sample size obtained was checked against Fritz and MacKinnon's (2007) paper in which they provide the necessary sample sizes to

achieve .8 power to detect an effect. The regression coefficients for paths a and b in our study (attachment to parenting stress and parenting stress to schizotypy respectively) are at least of medium effect size (see table 3), meaning that according to Fritz and MacKinnon (2007) a sample size of at least 71 is required in a bias-corrected bootstrap test. The current study achieved a sample size of 134 which means the mediation models were adequately powered to detect any effects.

Discussion

This study examined the relationships between trauma, attachment, parenting and schizotypy, with exploratory mediation analyses investigating whether parenting stress and competence mediated the association between attachment and schizotypy. There were significant indirect effects of attachment anxiety and attachment avoidance on schizotypy through parenting stress, though parenting competence did not have a significant effect as a mediator in the parallel model. Results did not differ significantly when demographic variables were controlled for in the analyses. Trauma was significantly associated with attachment anxiety, attachment avoidance and schizotypy, but was not significantly associated with parenting variables.

We predicted and found significant positive associations between schizotypy and attachment anxiety, attachment avoidance and childhood trauma, which supports previous studies in this area (e.g. Korver-Nieberg et al., 2014; Velikonja et al., 2015). In the current study, trauma was also associated with attachment as would be expected from existing research (Murphy et al., 2014; Riggs, 2010). The consequences of early trauma histories and attachment difficulties, such as difficulties in interpersonal relationships, problems regulating affect and negative beliefs about the self and others have been implicated in psychological models of the development of psychosis (Korver-Nieberg, Berry, Meijer, Haan, & Ponizovsky, 2015). The findings here suggest that early experiences might also play a role in the development of schizotypal symptoms.

We also hypothesised that there would be associations between parenting variables and attachment anxiety, attachment avoidance and trauma. As hypothesised, and in support of previous research, attachment was significantly associated with both parenting variables (Rholes, Simpson, & Friedman, 2006; Vieira, Avila, & Matos, 2012). In the case of attachment anxiety, an overactivation of the attachment system may lead to unrealistic

expectations of the parent-child relationship and elevation of stress levels when the child is perceived as demanding care (Moreira, Gouveia, Carona, Silva, & Canavarro, 2015).

Conversely, attachment avoidance may generate parental stress due to the difficulties experienced having a dependent child, which is at odds to the desire for self-sufficiency and independence (Mikulincer & Shaver, 2007). Parental competence has also been linked to insecure attachment in previous research (Gelkopf & Jabaturo, 2013), though the pathways from insecure attachment to lower parental competence are less clear with mediating factors such as depression having a more significant role than in the relationship between insecure attachment and parenting stress (Calvo & Bianco, 2015).

Contrary to predictions, trauma was not associated with either of the parenting measures despite recent evidence suggesting a possible link between early trauma and parenting stress (Steele et al., 2016). Both the present study and the Steele et al. (2016) study used the ACE questionnaire to assess trauma, but the two studies reported different degrees of trauma. In the current study, only 17% ($n = 22$) participants reported four or more ACE's whereas in the Steele et al. study 25% of community participants and 79% of clinical participants reported four or more ACE's. The relatively low levels of trauma in our study and the consequent lack of variance in our data may therefore have prevented us from identifying significant associations between trauma and parenting. The measure of trauma was not included in subsequent mediation analyses due to the non-significant association with the parenting variables.

As predicted parenting stress and competence were associated with schizotypy with a positive association between schizotypy and parenting stress and a negative association between schizotypy and parenting competence. The relationship between parenting stress and schizotypy could be bi-directional as parenting stress may be a trigger for schizotypy, or schizotypal symptoms may increase parental stress. Previous studies have shown evidence of

increased stress responsivity with schizotypy (Abbott, Do, & Byrne, 2012; Smith & Lenzenweger, 2013), focusing on the measurement of physiological markers of stress or psychosocial stressors in daily life. However, the current study specifically assessed the concept of parental stress which therefore adds to the existing literature on stress and schizotypy (e.g. Soliman et al., 2011). Several previous studies have investigated parenting outcomes in psychosis (e.g. Dolman, Jones, & Howard, 2013; Plant et al., 2002), however, this research tends to regard the parenting abilities of mothers who already have psychosis whereas the mediation model in the current study suggests that parenting emotional experiences may also predict levels of sub-clinical psychotic phenomena. The current study used a non-clinical population rather than a clinical sample, but due to the link between schizotypy and psychosis our findings suggest that the model should be tested in a clinical sample.

This is the first study to use a mediation model to explore associations between attachment, parenting and schizotypy in a non-clinical sample. Parenting stress was found to be a more significant mediator than parenting competence, and the latter did not reach significance in the parallel mediation model. Parental stress and competence shared a notable amount of variance ($R^2 = .63$) suggesting they measure similar constructs. It is possible that stress was a stronger predictor of schizotypy than competence. Previous research has found stress is related to both schizotypy and psychosis (Phillips, Francey, Edwards, McMurray, 2007; Smith & Lenzenweger, 2013), but no such relationship has been found between measures of self-perceived parenting competence and schizotypy/psychosis.

Strengths and Limitations

The results of the current study were from a relatively large, adequately powered sample which adds to the existing literature regarding attachment, parenting and schizotypy.

Using online methods of data collection enabled the recruitment of a more geographically diverse sample than would have been possible through traditional recruitment methods. The decision to focus on first time parents with a child under 12 months old also enabled a homogenous sample to be recruited for analysis.

Despite these strengths, the current study had a number of limitations which should be considered when evaluating the implications of the results. Firstly, the data was obtained from a cross-sectional sample which limits the degree to which causal inferences can be made. Secondly, participation in the current study was via response to an online advert, which increases the risk that some potential participants were not able to access the study. Thirdly, the current study used self-report measures which research suggests are susceptible to reporting biases and common method variance (Morsbach and Prinz, 2006).

Finally, it is also possible that other confounding variables which were not measured may account for the significance of the results in the current study. One particularly important confounder in this group would be Postpartum Depression (PPD) given the high levels of PPD reported in first time mothers (O'Hara & McCabe, 2013). Depression may have skewed the results obtained in the current study as research has shown it can lead to negative reporting bias (e.g. Moussavi et al., 2007). Participants experiencing depression may have endorsed more negative items on the measures included in the current study, or over-reported difficulties, for example with parenting stress.

Clinical implications

This study adds to the understanding of what may exacerbate mental health difficulties in the first 12 months postpartum as parental attachment insecurity and stress together predict elevated experiences of schizotypal symptoms. It is possible that mothers experiencing these difficulties may not encounter services. However, it is important to

identify mothers experiencing parenting stress postpartum, particularly those with difficult relationships from their family of origin or other important attachment relationships such as romantic partners, as this may help prevent exacerbation of schizotypal symptoms. Midwives and health visitors have a significant role in this identification process and should refer mothers on for specialist help if indicated, while being sensitive to the possible fear new mothers may have of their child being removed should they indicate lack of coping.

Normalising stressful feelings for new mothers should perhaps become routine during postpartum health visits, with the distribution of information and guidance on seeking support which can be accessed externally to the midwife/health visitor. Additionally, it is important to normalise schizotypal experiences in the face of stress so that new parents do not develop negative appraisals about their experiences. Research suggests that catastrophic meta-cognitive appraisals of anomalous sub-clinical psychotic-like experiences and consequent increases in stress can exacerbate psychotic experiences (Morrison & Wells, 2007), so acknowledging the difficult nature of the postpartum period, including the potential for schizotypal experiences, in a transparent way through literature and contact with health professionals may normalise experiences for new parents.

Finally, of further clinical significance is the potential outcomes for children of mothers with elevated stress and schizotypy. The first year of a child's life is a critical period in terms of developing attachments (Wan & Green, 2009), so disruptions in this period due to parental stress and/or mental health difficulties are highly significant and possibly pervasive for the child's lifetime, indicating the possibility for intergenerational transmission of difficulties. Addressing parenting stress in new mothers, as described above, may enable more positive parent-child interactions and mitigate any potential negative sequelae for the child in both the short and long-term.

Future Research

Future research should firstly test this model in a clinical population with parents experiencing psychosis. Additionally, investigation of associations between attachment, parenting and psychotic phenomena with the clinical subgroup of women experiencing PPP may advance understanding of the aetiology of this condition. It would also be beneficial to explore if the results found in this cross-sectional study occur across different periods of parenting with children of different age groups. This may enable firmer establishment of the causal pathways which were suggested in this cross-sectional study. Further research should also include other potential mediators or moderators which may affect the relationship between these three variables, for example depression. Finally, a measure of child outcomes in future studies of this nature may explore potential intergenerational transmission of insecure attachment style from the combined effects of parental attachment insecurity and parenting stress elevating schizotypal symptoms.

Summary and conclusions

This is the first study to investigate associations between attachment, parenting stress and schizotypy. The results indicated that the relationship between insecure attachment and elevated schizotypal symptoms was partially mediated by parenting stress in a non-clinical sample of first time parents with a child under 12 months. This suggests that both insecure attachment and parenting stress may be predictors of schizotypy in this postpartum period. The findings add to the existing literature by suggesting parenting stress may be an important factor in the experience of psychotic phenomena as previous research has focused on stress related to daily hassles or physiological stress responses. Finally, these findings suggest a need to test these hypotheses in a clinical sample of women experiencing PPP or new mothers with established psychosis.

References

- Abbott, G. R., Do, M., & Byrne, L. K. (2012). Diminished subjective wellbeing in schizotypy is more than just negative affect. *Personality and Individual Differences*, 52(8), 914-918. doi: 10.1016/j.paid.2012.01.018
- Ammerman, R. T., Shenk, C. E., Teeters, A. R., Noll, J. G., Putnam, F. W., & Van Ginkel, J. B. (2013). Multiple mediation of trauma and parenting stress in mothers in home visiting. *Infant Mental Health Journal*, 34(3), 234-241. doi: 10.1002/imhj.21383
- Barrantes-Vidal, N., Gross, G. M., Sheinbaum, T., Mitjavila, M., Ballespi, S., & Kwapil, T. R. (2013). Positive and negative schizotypy are associated with prodromal and schizophrenia-spectrum symptoms. *Schizophrenia Research*, 145(1-3), 50-55. doi: 10.1016/j.schres.2013.01.007
- Barrantes-Vidal, N., Grant, P., & Kwapil, T. R. (2015). The role of schizotypy in the study of the etiology of schizophrenia spectrum disorders. *Schizophrenia Bulletin*, 41(2), 408-416. doi: 10.1093/schbul/sbu191
- Berant, E., Mikulincer, M., & Florian, V. (2001). The association of mothers' attachment style and their psychological reactions to the diagnosis of infant's congenital heart disease. *Journal of Social and Clinical Psychology*, 20(2), 208-232. doi: 10.1521/jscp.20.2.208.22264
- Berry, J. D. & Jones, W. H. (1995). The Parental Stress Scale: Initial psychometric evidence. *Journal of Social and Personal Relationships*, 12(3), 463-472. doi:10.1177/0265407595123009
- Berry, K., Band, R., Corcoran, R., Barrowclough, C., & Wearden, A. (2007). Attachment styles, earlier interpersonal relationships and schizotypy in a non-clinical sample.

Psychology and Psychotherapy: Theory, Research and Practice, 80(4), 563-576. doi: 10.1348/147608307X188368

Berry, K., Barrowclough, C., & Wearden, A. (2008). Attachment theory: A framework for understanding symptoms and interpersonal relationships in psychosis. *Behaviour Research and Therapy*, 46(12), 1275-1282. doi: 10.1016/j.brat.2008.08.009

Berry, K., Barrowclough, C., & Wearden, A. (2009). Adult attachment, perceived earlier experiences of care giving and trauma in people with psychosis. *Journal of Mental Health*, 18(4), 280-287. doi: 10.1080/09638230701879185

Bowlby, J. (1969). *Attachment. Attachment and loss: Vol. 1. Loss*. New York, NY: Basic Books.

Callaway, D. A., Cohen, A. S., Matthews, R. A., & Dinzeo, T. (2014). Schizotypal Personality Questionnaire – Brief Revised: Psychometric replication and extension. *Personality Disorders: Theory, Research, and Treatment*, 5(1), 32-38. doi: 10.1037/per0000041

Calvo, V. & Bianco, F. (2015). Influence of adult attachment insecurities on parenting self-esteem: The mediating role of dyadic adjustment. *Frontiers in Psychology*, 6, 1-14. doi: 10.3389/fpsyg.2015.01461

Cohen, A. S., Matthews, R. A., Najolia, G. M., & Brown, L. A. (2010). Toward a more psychometrically sound brief measure of schizotypal traits: Introducing the SPQ Brief Revised. *Journal of Personality Disorders*, 24(4), 516-537. doi: 10.1521/pedi.2010.24.4.516

Cohen, J. (1988). *Statistical Power Analysis for the Behavioural Sciences*, (2nd Ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

- Davidson, K. A., Harder, S., MacBeth, A., Lundy, J. M., & Gumley, A. (2015). Mother infant interaction in schizophrenia: Transmitting risk or resilience? A systematic review of the literature. *Social Psychiatry and Psychiatric Epidemiology*, 50(12), 1785-1798. doi: 10.1007/s00127-015-1127-x
- Debbane, M., Eliez, S., Badoud, D., Conus, P., Fluckiger, R., & Schultze-Lutter, F. (2015). Developing psychosis and its risk states through the lens of schizotypy. *Schizophrenia Bulletin*, 41(2), 396-407. doi: 10.1093/schbul/sbu17
- Dolman, C., Jones, I., & Howard, L. M. (2013). Pre-conception to parenting: A systematic review and meta-synthesis of the qualitative literature on motherhood for women with severe mental illness. *Archives of Women's Mental Health*, 16(3), 173-196. doi: 10.1007/s00737-013-0336-0
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioural, and biomedical sciences. *Behaviour Research Methods*, 39(2), 175-191. doi: 10.3758/BF03193146
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... Marks, J. S. (1998). Relationships of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Preventative Medicine*, 14(4), 245-258. doi: 10.1016/S0749-3797(98)00017-8
- Fernandes, C., Muller, R., & Rodin, G. (2012). Predictors of parenting stress in patients with haematological cancer. *Journal of Psychosocial Oncology*, 30(1), 81-96. doi: 10.1080/09638230701879185
- Field, A. (2014). *Discovering Statistics Using IBM SPSS Statistics* (4th ed.). London: Sage Publications.

Fossati, A., Feeney, J. A., Donati, D., Donini, M., Novella, L., Bagnato, M., ... Maffei, C.

(2003). Personality disorders and adult attachment dimensions in a mixed psychiatric sample: A multivariate study. *The Journal of Nervous and Mental Disease*, 191(1), 30-37. doi: 10.1097/00005053-200301000-00006

Fraley, R. C., Brumbaugh, C. C., & Marks, M. J. (2005). The evolution and function of adult

attachment: A comparative and phylogenetic analysis. *Journal of Personality and Social Psychology*, 89(5), 731-746. doi: 10.1037/0022-3514.89.5.751

Fraley, R. C., Roisman, G. I., Booth-LaForce, C., Owen, M. T., & Holland, A. S. (2013).

Interpersonal and genetic origins of adult attachment styles: A longitudinal study from infancy to early adulthood. *Journal of Personality and Social Psychology*, 104(5), 817-838. doi: 10.1037/a0031435

Fritz, M. S. & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect.

Psychological Science, 18(3), 233-239. doi: 10.1111/j.1467-9280.2007.01882.x

Gelkopf, M. & Jabotaro, E. (2013). Parenting style, competence, social network and

attachment in mothers with mental illness. *Child & Family Social Work*, 18(4), 496-503. doi: 10.1111/j.1365-2206.2012.00874.x

Gilmore, L. & Cuskelly, M. (2008). Factor structure of the Parenting Sense of Competence

scale using a normative sample. *Child: Care, Health and Development*, 35(1), 48-55. doi: 10.1111/j.1365-2214.2008.00867.x

Harder, S. & Folke, S. (2012). Affect regulation and metacognition in psychotherapy of

psychosis: An integrative approach. *Journal of Psychotherapy Integration*, 22(4), 330-343. doi: 10.1037/a0029578

- Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis [electronic resource]: A regression-based approach*. New York, NY: The Guilford Press.
- Hayes, A. F. (2016). The PROCESS Macro [Version 2.16]. Retrieved from <http://processmacro.org/download.html>.
- Hazan, C. & Shaver, P. (1987). Romantic love conceptualised as an attachment process. *Journal of Personality and Social Psychology*, 52(3), 511-514. doi: 10.1037/0022-3514.52.3.511
- Howard, K. S. (2010). Paternal attachment, parenting beliefs and children's attachment. *Early Child Development and Care*, 180(1-2), 157-171. doi: 10.1080/03004430903415031
- IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.
- Johnston, C. & Mash, E. J. (1989). A measure of parenting satisfaction and efficacy. *Journal of Clinical Child Psychology*, 18(2), 167-175. doi: 10.1207/s15374424jccp1802_8
- Jones, J. D., Cassidy, J., & Shaver, P. R. (2015a). Adult Attachment style and parenting. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment Theory and Research: New Directions and Emerging Themes* (pp. 234-260). New York, NY: The Guilford Press.
- Jones, J. D., Cassidy, J., & Shaver, P. R. (2015b). Parents' self-reported attachment styles: A review of links with parenting behaviours, emotions, and cognitions. *Personality and Social Psychology Review*, 19(1), 44-76. doi: 10.1177/108886831454185

- Kohlhoff, J. & Barnett, B. (2013). Parenting self-efficacy: Links with maternal depression, infant behaviour and adult attachment. *Early Human Development*, 89(4), 249-256. doi: 10.1016/j.earlhumdev.2013.01.008
- Korver-Nieberg, N., Berry, K., Meijer, C. J., de Haan, L. (2014). Adult attachment and psychotic phenomenology in clinical and non-clinical samples: A systematic review. *Psychology and Psychotherapy: Theory, Research and Practice*, 87(2), 127-154. doi: 10.1111/papt.12010
- Korver-Nieberg, N., Berry, K., Meijer, C., de Haan, L., & Ponizovsky, A. M. (2015). Associations between attachment and psychopathology dimensions in a large sample of patients with psychosis. *Psychiatry Research*, 228(1), 83-88. doi: 10.1016/j.psychres.2015.04.018
- Kvrgic, S., Beck, E.-M., Cavelti, M., Kossowsky, J., Stieglitz, R.-D., & Vauth, R. (2011). Focusing on the adult attachment style in schizophrenia in community mental health centres: Validation of the Psychosis Attachment Measure (PAM) in a German speaking sample. *International Journal of Social Psychiatry*, 58(4), 362-373. doi: 10.1177/0020764011399004
- Lahti, J., Raikkonen, K., Sovio, U., Miettunen, J., Hartikainen, A. L., Pouta, A., ... Veijola, J. (2009). Early-life origins of schizotypal traits in adulthood. *The British Journal of Psychiatry*, 195(2), 132-137. doi: 10.1192/bjp.bp.108.054387
- Leahy-Warren, P. & McCarthy, G. (2011). Maternal parental self-efficacy in the postpartum period. *Midwifery*, 27(6), 802-810. doi: 10.1016/j.midw.2010.07.008

- Lenzenweger, M. F. (2015). Thinking clearly about schizotypy: Hewing to the schizophrenia liability core, considering interesting tangents, and avoiding conceptual quicksand. *Schizophrenia Bulletin*, 41(2), 483-491. doi:10.1093/schbul/sbu184
- Linney, Y. M., Murray, R. M., Peters, E. R., MacDonald, A. M., Rijdsdijk, F., & Sham, P. C. (2003). A quantitative genetic analysis of schizotypal personality traits. *Psychological Medicine*, 33(5), 803-816. doi: 10.1017/S003329170300790
- Mikulincer, M. & Shaver, P. R. (2003). The attachment behavioural system in adulthood: Activation, psychodynamics, and interpersonal processes. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology*, 35, 53-152. New York, NY: Academic Press. doi: 10.1016/S0065-2601(03)01002-5
- Mikulincer, M. & Shaver, P. R. (2005). Attachment theory and emotions in close relationships: Exploring the attachment-related dynamics of emotional reactions to relational events. *Personal Relationships*, 12(2), 149-168. doi: 10.1111/j.1350-4126.2005.00108.x
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York, NY: The Guilford Press.
- Moreira, H., Gouveia, M. J., Carona, C., Silva, N., & Canavarro, M. C. (2015). Maternal attachment and children's quality of life: The mediating role of self-compassion and parenting stress. *Journal of Child and Family Studies*, 24(8), 2332-2344. doi: 10.1007/s10826-014-0036-z
- Morley, T. E. & Moran, G. (2011). The origins of cognitive vulnerability in early childhood: Mechanisms linking early attachment to later depression. *Clinical Psychology Review*, 31(7), 1071-1082. doi: 10.1016/j.cpr.2011.06.006

- Morrison, A. P. & Wells, A. (2007). Relationships between worry, psychotic experiences and emotional distress in patients with schizophrenia spectrum diagnoses and comparisons with anxious and non-patient groups. *Behaviour Research and Therapy*, 45(7), 1593-1600. doi: 10.1016/j.brat.2006.11.010
- Morsbach, S. K. & Prinz, R. J. (2006). Understanding and improving the validity of self-report of parenting. *Clinical Child and Family Psychology Review*, 9(1), 1-21. doi: 10.1007/s10567-006-0001-5
- Moussavi, S., Chatterji, S., Verdes, E., Tandon, A., Patel, V., & Ustun, B. (2007). Depression, chronic diseases, and decrements in health: Results from the World Health Surveys. *The Lancet*, 370(9590), 851-858. doi: 10.1016/S01406736(07)61415-9
- Murphy, A., Steele, M., Dube, A. R., Bate, J., Bonuck, K., Meissner, P., ... Steele, H. (2014). Adverse Childhood Experiences (ACEs) Questionnaire and Adult Attachment Interview (AAI): Implications for parent child relationships. *Child Abuse & Neglect*, 38(2), 224-233. doi: 10.1016/j.chiabu.2013.09.004
- Murray, L., Cooper, P., & Hipwell, A. (2003). Mental health of parents caring for infants. *Archives of Women's Mental Health*, 6(2), 71-77. doi: 10.1007/s00737-003-0007-7
- Neece, C. L., Green, S. A., & Baker, B. L. (2012). Parenting Stress and child behaviour problems: A transactional relationship across time. *American Journal on Intellectual and Developmental Disabilities*, 117(1), 48-66. doi: 10.1352/1944-7558-117.1.48
- Nelson, M. T., Seal, M. L., Pantelis, C., & Phillips, L. J. (2013). Evidence of a dimensional relationship between schizotypy and schizophrenia: A systematic review.

Neuroscience and Biobehavioural Reviews, 37, 317-327. doi:

10.1016/j.neubiorev.2013.01.004

O'Hara, M. W. & McCabe, J. E. (2013). Postpartum depression: Current status and future directions. *Annual Review of Clinical Psychology*, 9, 379-407. doi: 10.1146/annurev-clinpsy-050212-185612

Phillips, L. J., Francey, S. M., Edwards, J., & McMurray, N. (2007). Stress and psychosis: Towards the development of new models of investigation. *Clinical Psychology Review*, 27(3), 307-317. doi: 10.1016/j.cpr.2006.10.003

Pickering, L., Simpson, J., & Bentall, R. P. (2008). Insecure attachment predicts proneness to paranoia but not hallucinations. *Personality and Individual Differences*, 44(5), 1212-1224. doi: 10.1016/j.paid.2007.11.016

Plant, K., Byrne, L., Barkla, J., McLean, D., Hearle, J., & McGrath, J. (2002). Parents with psychosis: a pilot study examining self-report measures related to family functioning. *Australian e-Journal for the Advancement of Mental Health*, 1(1), 38-48. doi: 10.5172/jamh.1.1.38

Preacher, K. J. & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behaviour Research Methods, Instruments, & Computers*, 36(4), 717-731. doi: 10.3758/BF03206553

Rholes, W. S., Simpson, J. A., & Friedman, M. (2006). Avoidant attachment and the experience of parenting. *Personality and Social Psychology Bulletin*, 32(3), 275-285. doi: 10.1177/0146167205280910

- Riggs, S. A. (2010). Childhood emotional abuse and the attachment system across the life cycle: What theory and research tell us. *Journal of Aggression, Maltreatment & Trauma, 19*(1), 5-51. doi: 10.1080/10926770903475968
- Shaver, P. R. & Mikulincer, M. (2007). Adult Attachment Strategies and the Regulation of Emotion. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 446-465). New York, NY: Guilford Press.
- Smith, N. T. & Lenzenweger, M. F. (2013). Increased stress responsivity in schizotypy leads to diminished spatial working memory performance. *Personality Disorders: Theory, Research, and Treatment, 4*(4), 324-331. doi: 10.1037/per0000014
- Soliman, A., O'Driscoll, G. A., Pruessner, J., Joobers, R., Ditto, B., Streicker, E., ... Dagher, A. (2011). Limbic response to psychosocial stress in schizotypy: A functional magnetic resonance imaging study. *Schizophrenia Research, 131*(1), 184-191. doi: 10.1016/j.schres.2011.05.016
- Steele, H., Bate, J., Steele, M., Dube, S. R., Danskin, K., Knafo, H., ... Murphy, A. (2016). Adverse childhood experiences, poverty and parenting stress. *Canadian Journal of Behavioural Science, 48*(1), 32-38. doi: 10.1037/cbs0000034
- Tiliopoulos, N. & Goodall, K. (2009). The neglected link between adult attachment and schizotypal personality traits. *Personality and Individual Differences, 47*(4), 299-304. doi: 10.1016/j.paid.2009.03.017
- Van Os, J., Kenis, G., & Rutten, B. P. F. (2010). The environment and schizophrenia. *Nature, 468*(7321), 203-212. doi: 10.1038/nature0956
- Velikonja, T., Fisher, H. L., Mason, O., & Johnson, S. (2015). Childhood trauma and schizotypy: a systematic literature review. *Psychological Medicine, 45*, 947-963. doi:10.1017/S0033291714002086

- Vieira, J. M., Avila, M., Matos, P. M. (2012). Attachment and parenting: The mediating role of work-family balance in Portuguese parents of preschool children. *Family Relations*, 61(1), 31-50. doi: 10.1111/j.1741-3729.2011.00680.x
- Von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., & Vandenbroucke, J. P. (2008). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: Guidelines for reporting observational studies. *Journal of Clinical Epidemiology*, 61(4), 344-349. doi:10.1016/j.jclinepi.2007.11.008
- Wan, M. W. & Green, J. (2009). The impact of maternal psychopathology on child-mother attachment. *Archives of Women's Mental Health*, 12(3), 123-134. doi: 10.1007/s00737-009-0066-5
- Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. L. (2007). The Experiences in Close Relationships Scale (ECR)-Short Form: Reliability, validity, and factor structure. *Journal of Personality Assessment*, 88(2), 187-204. doi: 10.1080/00223890701268041
- Wickham, S., Sitko, K., & Bentall, R. P. (2015). Insecure attachment is associated with paranoia but not hallucinations in psychotic patients: The mediating role of negative self-esteem. *Psychological Medicine*, 45(7), 1495-1507. doi: 10.1017/S0033291714002633
- Wuthrich, V. M. & Bates, T. C. (2006). Confirmatory factor analysis of the three-factor structure of the Schizotypal Personality Questionnaire and Chapman Schizotypy Scales. *Journal of Personality Assessment*, 87(3), 292-304. doi: 10.1207/s15327752jpa8703_10

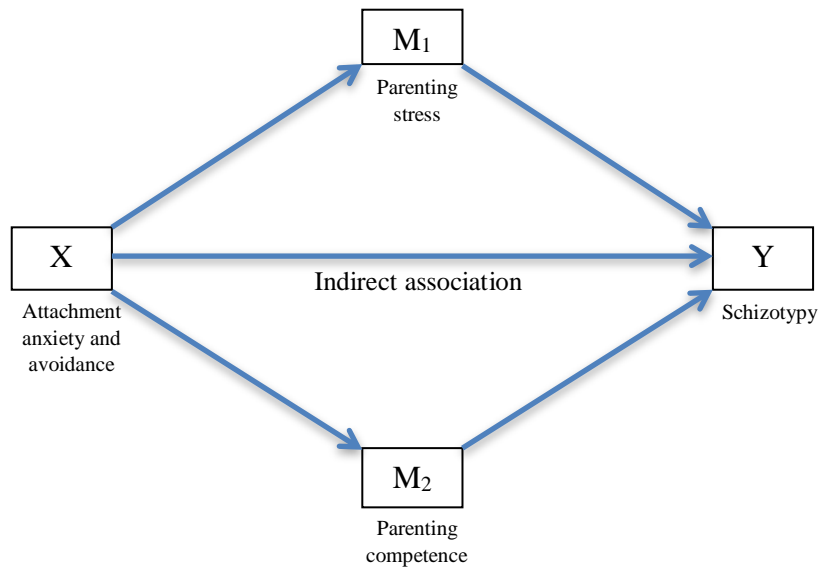
Figures and Tables

Figure 1. Illustrative diagram of the hypothesized mediation model showing attachment as the predictor variable, schizotypy as the outcome variable and parenting stress and competence as mediating variables.

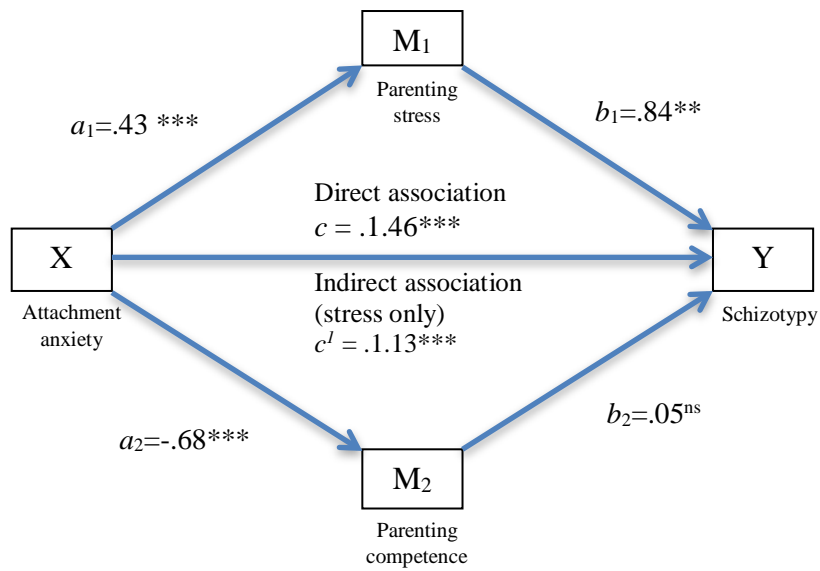


Figure 2. Mediation model 1 testing if parenting stress and parenting competence mediate the relationship between attachment anxiety and schizotypy.

* $p < .05$, ** $p < .01$, *** $p < .001$, ns = non-significant

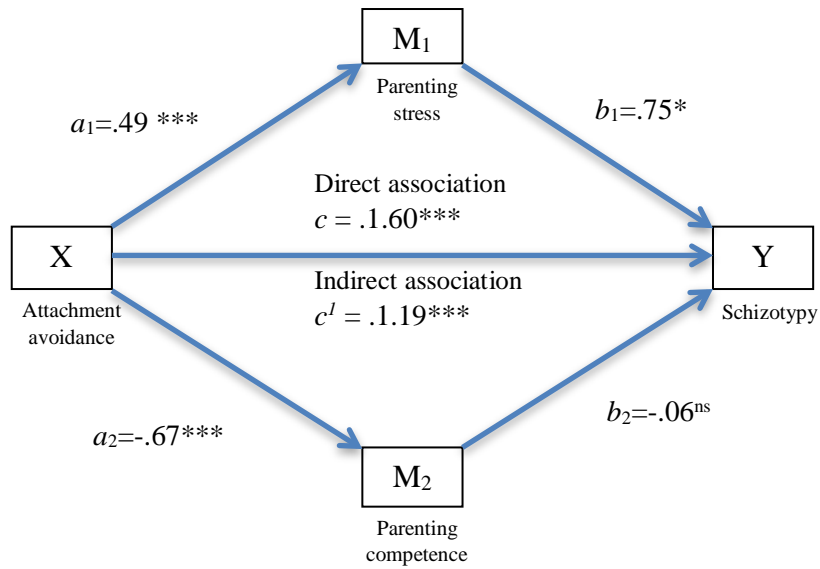


Figure 3. Mediation model 2 testing if parenting stress and parenting competence mediate the relationship between attachment avoidance and schizotypy.

* $p < .05$, ** $p < .01$, *** $p < .001$, ns = non-significant

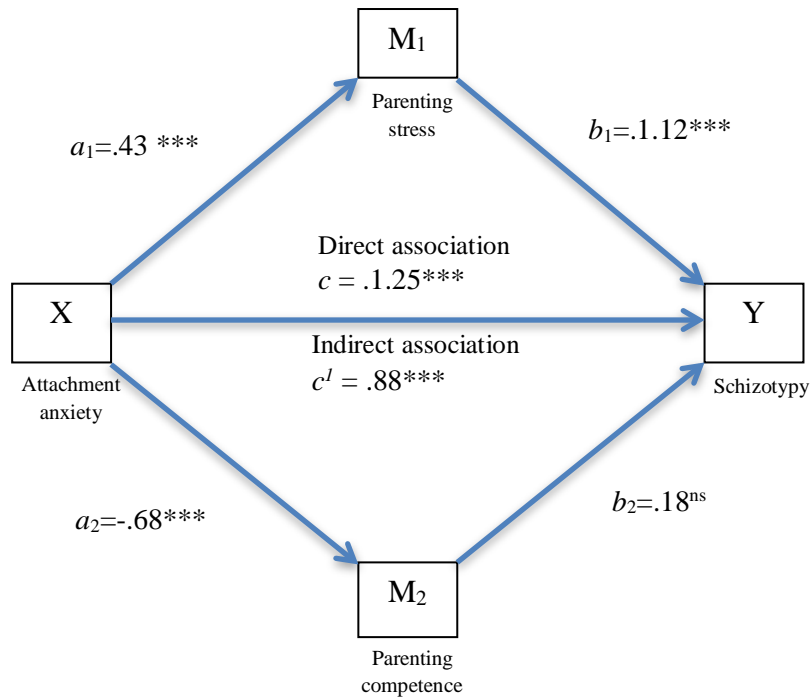


Figure 4. Mediation model 1 testing if parenting stress and parenting competence mediate the relationship between attachment anxiety and schizotypy, controlling for gender of participant, employment status, previous diagnosis of a mental health condition and prior contact with mental health services.

* $p < .05$, ** $p < .01$, *** $p < .001$, ns= non-significant

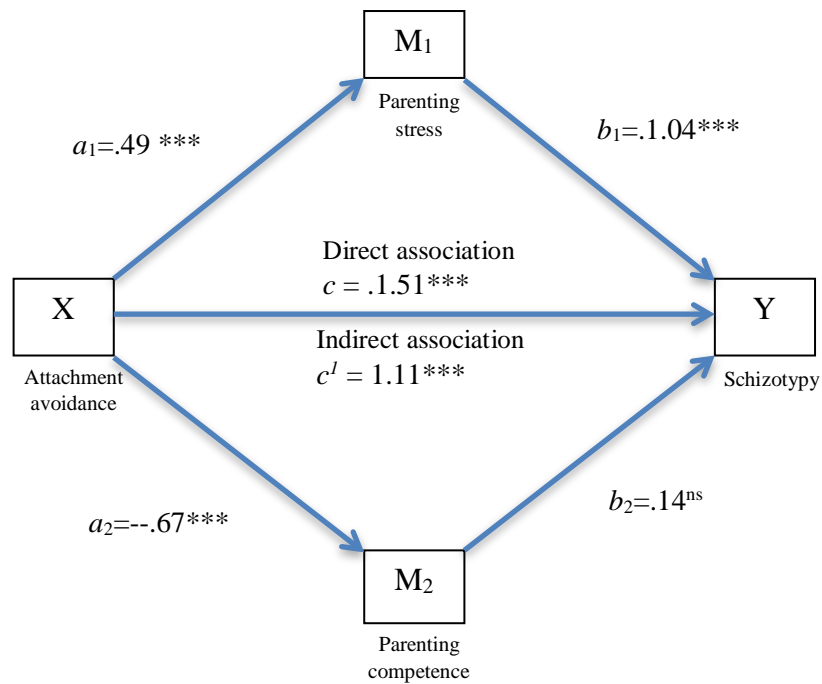


Figure 5. Mediation model 2 testing if parenting stress and parenting competence mediate the relationship between attachment avoidance and schizotypy, controlling for gender of participant, employment status, previous diagnosis of a mental health condition and prior contact with mental health services.

* $p < .05$, ** $p < .01$, *** $p < .001$, ns= non-significant

Table 1. Demographic data and descriptive statistics

N = 134			
Gender: Female, <i>n</i> (%)		126	(94)
Age of participant in years, mean		31	
Age of child in months, mean		7	
Gender of child: Female, <i>n</i> (%)		65	(48.5)
Country of residence, <i>n</i> (%)	UK	113	(84)
	Other	21	(16)
Ethnicity, <i>n</i> (%)	Caucasian	116	(86.5)
	Other	18	(13.5)
Marital status, <i>n</i> (%)	Married or cohabiting	130	(97)
	Other	4	(3)
Highest level of education, <i>n</i> (%)	GCSE/NVQ/A-Level	23	(17.2)
	Undergraduate degree/above	111	(82.8)
Employment status, <i>n</i> (%)	Employed/maternity leave	119	(89)
	Unemployed	15	(11)
Previous diagnosis of a MH condition: Yes, <i>n</i> (%)		29	(22)
Prior contact with MH services: Yes, <i>n</i> (%)		40	(30)
PSOC, mean (SD)		67.13	(10.82)
N = 134			
Parental Stress Scale, mean (SD)		38.74	(8.28)
N = 133			
Attachment anxiety (ECR-S), mean (SD)		20.04	(6.64)
N = 133			
Attachment avoidance (ECR-S), mean (SD)		13.15	(5.88)
N = 133			
SPQ-BR, mean (SD)		44.38	(21.44)
N = 128			
ACE, mean (SD)		1.68	(1.81)
N = 127			
Participants reporting 4 or more ACE's, <i>n</i> (%)		22	(17)

Abbreviations: MH, mental health; SD, Standard Deviation; PCOS, Parenting Sense of Competence Scale; ECR-S, Experiences of Close Relationships – Short Form; SPQ-BR, Schizotypal Personality Questionnaire – Brief Revised; ACE, Adverse Childhood Experiences Questionnaire.

Table 2. Correlation matrix for the variables in the study (Pearson's r)

Measure		1	2	3	4	5	6
1	PCOS	-					
2	Parental Stress Scale	-.80**	-				
3	Attachment Anxiety (ECR-S)	-.40**	.34**	-			
4	Attachment avoidance (ECR-S)	-.35**	.31**	.29**	-		
5	SPQ-BR	-.37**	.42**	.50**	.43**	-	
6	ACE	-.09	.09	.20*	.23**	.41**	-

Abbreviations: PCOS, Parenting Sense of Competence Scale; ECR-S, Experiences of Close Relationships – Short Form; SPQ-BR, Schizotypal Personality Questionnaire – Brief Revised; ACE, Adverse Childhood Experiences Questionnaire.

** $p = .01$, * $p = .05$

Table 3. Results of regression analyses

Model 1	IV	DV	<i>b</i>	<i>df</i>	<i>SE</i>	<i>t</i>	<i>p</i>	LLCI	ULCI
	Attachment anxiety	Schizotypy	1.13	124	.27	4.18	<.001	.60	1.67
	Attachment anxiety	Parenting stress	.43	126	.10	4.12	<.001	.22	.64
	Attachment anxiety	Parenting competence	-.68	126	.14	-4.98	<.001	-.95	-.41
	Parenting stress	Schizotypy	.84	124	.33	2.54	.05	.18	1.49
	Parenting competence	Schizotypy	.05	124	.25	.19	<i>ns</i>	-.45	.55
Total effect X on Y:	Attachment anxiety	Schizotypy	1.46	126	.26	5.63	<.001	.95	1.97

¹ Model 1 uses attachment anxiety as the predictor variable. This table shows the regression analyses between all the variables used in this model. These are all significant except for the parenting competence and schizotypy outcome which indicates parenting competence does not predict schizotypy in the presence of attachment anxiety.

Model 2	IV	DV	<i>b</i>	<i>df</i>	<i>SE</i>	<i>t</i>	<i>p</i>	LLCI	ULCI
	Attachment avoidance	Schizotypy	.19	124	.31	3.89	<.001	.58	1.79
	Attachment avoidance	Parenting stress	.49	126	.12	4.12	<.001	.26	.73
	Attachment avoidance	Parenting competence	-.67	126	.16	-4.26	<.001	-.99	-.36
	Parenting stress	Schizotypy	.75	124	.33	2.23	.05	.08	1.41
	Parenting competence	Schizotypy	-.06	124	.25	-.23	<i>ns</i>	-.56	.44
Total effect X on Y:	Attachment avoidance	Schizotypy	1.60	126	.30	5.36	<.001	1.01	2.18

² Model 2 uses attachment avoidance as the predictor variable. This table shows the regression analyses between all the variables used in this model. These are all significant except for the parenting competence and schizotypy outcome which indicates parenting competence does not predict schizotypy in the presence of attachment avoidance.

Table 4. Results of mediation analyses

Model	IV	Mediator	DV	<i>b</i>	<i>R</i> ²	Bootstrap 5000 samples					
						<i>SE</i>	LLCI	ULCI	<i>ab</i>	<i>SE</i>	LLCI- ULCI
Model 1	Attachment anxiety	Parenting stress	Schizotypy	.36	.28	.18	.07	.80	.11	.05	.02 - .23
Model 2	Attachment avoidance	Parenting stress	Schizotypy	.37	.27	.21	.04	.92	.10	.05	.01 - .23

Appendices

Appendix A: Participant Information Sheet



Participant Information Sheet

What affects the experience of parenting?

Introduction

My name is Melanie Hugill and I am conducting this research as a student of the Doctorate in Clinical Psychology Programme at Lancaster University, Lancaster, United Kingdom.

Before deciding whether you wish to participate please read the information below which tells you about the research. If you have any further questions please contact the chief investigator by emailing Melanie Hugill on m.hugill@lancaster.ac.uk. I will respond to emails during working hours until 1st September 2016 as that is when the project ends.

What is the research about?

I am interested in whether past experiences affect how you feel about parenting. Sometimes, people experience difficulties in their past relationships, for example problems with their own parents. I would like to see if that impacts on how you see yourself as a parent. I am also interested in mental health and if this links in with your experience as a new parent.

Do I have to take part?

No. It's completely up to you to decide whether or not you take part. If you would like to take part, then please continue to the survey using the link below once you have read this information sheet. You can also stop answering the questions at any time if you feel you don't want to continue. However, any answers you have already given cannot be removed as all the data is anonymous so we won't know which is yours.

What will I be asked to do if I take part?

If you decide you are willing to take part, you will first be asked to give your consent on the next page. After this there are some basic information questions such as age, gender, age of your child, country you live in etc. Following this the survey begins. There are five different questionnaires of varying lengths, from 10 to 32 items. It will probably take between 20 and 30 minutes to complete them all.

The questions are about a variety of experiences including memories of your relationship with your parents, how you feel about close relationships, mental health, how much stress you experience as a new parent and how confident you feel as a parent.

Are there any risks?

We do not anticipate there will be any risks from participating in this survey. However, you may find some of the questions are of a sensitive nature. Please remember that you can stop the survey at any time as you do not have to take part. If you do experience any distress after taking part, then please consider the list of resources provided at the end of this sheet that will be able to offer you support if you need it.

Are there any benefits to taking part?

Although you may find participating interesting, there are no direct benefits to taking part. Findings from this survey may help us to better understand all the different factors that may affect how someone experiences being a new parent. This may help health professionals to develop interventions or resources in the future. You can receive a summary of the results of this survey by providing an email address at the end of the questions.

Also, there is a £50 prize draw for an Amazon voucher. Everyone who completes the survey can be entered into this by leaving an email address when indicated at the end of the survey. Any email addresses will be kept separately from the answers you give and will not be used for any other purpose than sending you a summary of the results and notifying the winner of the voucher. This will be in approximately September 2016, and once this is done all the email addresses will be deleted.

What will happen if I don't want to carry on once I have started?

You can stop answering the questions at any time and leave the survey or you could just leave out the questions that you do not wish to answer. We will not be able to contact you as you are participating anonymously. However, any data you have entered up to that point will have to remain in the survey as we won't know which is yours.

Will my data be confidential?

Yes, all the answers you give will be anonymous and no one will know you have participated unless you tell them. We will ask for no identifying information such as your name or address. The answers from all participants will be put together to be analysed and this data will be stored on Lancaster University's secure computer system with only the researchers having access to it. This data will be kept for 10 years in accordance with Lancaster University's policy and then it will be deleted.

If you provide your email address for a summary of the results or to be entered into the prize draw, this will be kept separately from the answers you give. All email addresses will be stored in a password encrypted file on Lancaster University's secure server. Once the results have been sent out and the winner of the voucher has been notified this file will be deleted.

What will happen to the results?

The results will be analysed and reported in my thesis for the Doctorate of Clinical Psychology Programme. The thesis will be submitted for publication in an academic or professional journal once it has been passed by the programme. I will send you a summary of the results if you request this by leaving an email address at the end of the survey. The websites who advertised this survey will also be offered a summary of the results.

Who has reviewed the project?

This research has been reviewed by the Faculty of Health and Medicine Research Ethics Committee, and approved by the University Research Ethics Committee at Lancaster University.

Where can I obtain further information about the research if I need it?

If you have any questions about the research, please contact me in the first instance:
Melanie Hugill

Trainee Clinical Psychologist
Doctorate in Clinical Psychology
Faculty of Health and Medicine
C Floor, Furness Building
Lancaster University
Lancaster
LA1 4YG
m.hugill@lancaster.ac.uk

Complaints

If you wish to make a complaint or raise concerns about any aspect of this research and do not want to speak to the chief investigator, you can contact the chair of the Faculty of Health and Medicine Research Ethics Committee:

Professor Roger Pickup
Chair of the Faculty of Health and Medicine Research Ethics Committee
Lancaster University
Faculty of Health and Medicine
Lancaster
LA1 4YD
Tel: 01524 593718

Thank you for taking the time to read this information sheet.

With sincere thanks,

Melanie Hugill

Resources in the event of distress

Should you feel distressed either as a result of taking part in this survey, or in the future, the following resources may be of assistance:

- Your GP – your GP can offer you support and suggest various methods of treating/coping with your distress, e.g. they can refer you on to mental health teams.
- Your midwife or health visitor – these professionals can provide support to new parents and suggest ways of managing. They also have knowledge of what's going on in your area and may be able to suggest support networks for you to get involved in.
- The Samaritans – they offer support any time of day or night to anyone who calls. You can visit their website at www.samaritans.org or call on 08457 90 90 90.
- The NSPCC – the NSPCC can help if you are worried about the safety of a child. You can contact them by phoning 0808 800 5000, by texting 88858 or by emailing help@nspcc.org.uk.
- Family Lives – this is a charity dedicated to supporting parents and making happier families. You can view their website at www.familylives.org.uk or call them between 7am-midnight on 0808 800 2222.

Appendix B: Debrief Sheet



What affects the experience of parenting?

Debrief sheet

Thank you for participating in this study, I appreciate the time you have given. I hope answering the questions has not distressed you in any way, but if you are feeling distressed then listed at the end of this page are some services/organisations that will be able to offer you support if you need it.

Below is a brief summary of the study if you would like to know more about it:

We know that being a new parent can be a stressful time and it is normal to find it difficult. This study has been exploring past experiences which might make it more difficult for some people. We are looking particularly at how people's past experiences of relationships may affect how they see themselves as a parent. Also, sometimes people may have unusual experiences such as those asked about in the survey and we are looking at whether these link into how people experience being a parent. We want to reassure you though that as new parents, it is normal to doubt your abilities as a parent and feel that you aren't doing a good job. It is important to know that these feelings are widely experienced by parents and completely normal. However, if you are worried at all, please do seek support. The following resources will be able to help you:

Resources in the event of distress

Should you feel distressed either as a result of taking part in this study, or in the future, the following resources may be of assistance:

- Your GP – your GP can offer you support and suggest various methods of treating/coping with your distress, e.g. they can refer you on to mental health teams.
- Your midwife or health visitor – these professionals can provide support to new parents and suggest ways of managing. They also have knowledge of what's going on in your area and may be able to suggest support networks for you to get involved in.
- The Samaritans – they offer support any time of day or night to anyone who calls. You can visit their website at www.samaritans.org or call on 08457 90 90 90.
- The NSPCC – the NSPCC can help if you are worried about the safety of a child. You can contact them by phoning 0808 800 5000, by texting 88858 or by emailing help@nspcc.org.uk.
- Family Lives – this is a charity dedicated to supporting parents and making happier families. You can view their website at www.familylives.org.uk or call them between 7am-midnight on 0808 800 2222.

Once again, thank you for your time.

Best wishes,

Melanie Hugill

Appendix C: Research Protocol



What affects the experience of parenting? An investigation of the relationships between schizotypy, attachment and parenting in an analogue sample.

Schizotypy has been conceptualised as “the non-clinical manifestation” of the same factors that underlie schizophrenia/psychosis (Meins, Jones, Fernyhough, Hurndall, & Koronis, 2008). Recent literature has advocated psychosis to be on a continuum, with disorder level clinical psychosis at one extreme and experiences of psychosis that are transitory and sub-clinical at the other, namely schizotypy (Nelson, Seal, Pantelis & Phillips 2013). It is now well established that early relational trauma such as sexual, physical and emotional abuse play a casual role in the development of psychosis and schizotypy (Velikonja, Fisher, Mason and Johnson, 2015). More recently, an increasing number of studies are looking at how subtler relational traumas such as poor parental bonding and attachment difficulties may be associated with psychosis. For example, Korver-Nieberg, Berry, Meijer & De Haan (2014) systematically reviewed studies concerning attachment and psychotic phenomenology and found that insecure attachment styles, namely avoidant and anxious, were associated with increased reports of psychotic phenomenology.

Attachment theory (Bowlby, 1969) posits that children develop internal working models of self and others through early relationships with caregivers, which persist throughout adulthood. Ainsworth, Blehar, Waters and Wall (1978) studied the mother-infant

relationship and suggested three styles of infant attachment; secure, anxious/ambivalent and avoidant. The applicability of these categories to adult romantic relationships was explored by Hazan and Shaver (1987) who found that the frequency of the three styles of attachment and the characteristics of individuals in each one were similar to those identified in infants. Subsequently, attachment anxiety and attachment avoidance have come to be conceptualised as two dimensions of insecure attachment in adults which can be measured using self-report scales (e.g. Brennan, Clark and Shaver, 1998).

More recent research has focused on links between adult attachment and its role in parenting style. Jones, Cassidy & Shaver (2015) describe, using the work of Bowlby, how parents with insecure attachment styles may be more susceptible to activation of this system, for example from perceived threats to the relationship, resulting in reduced abilities to care for their children. In their paper Jones et al (2015) conducted a thorough review of research regarding self-reported attachment styles and parenting and their findings indicate that insecure attachment is associated with more negative parenting behaviours, emotions and cognitions. Insecure attachment categorisation equates to higher levels of adult attachment anxiety or avoidant styles.

Additionally, research indicates that attachment style is closely related to recalled difficulties with parental bonding. In their seminal paper Hazan & Shaver (1987) found the quality of the recalled relationship with parents was a significant predictor of attachment style. More recently, Dalton, Frick-Horbury and Kitzmann (2006) found a positive association between reported quality of current relationships and recalled parenting from childhood. Moreover, evidence also suggests a link between the experience of sub-optimal parenting and increased vulnerability to psychotic phenomenon. The parental style of low care/high over-protection in memories of parental bonding has been shown to associate with

schizophrenia (e.g. Willinger, Heiden, Meszaros, Formann & Aschauer, 2002) and with schizotypal traits (Giakoumaki et al., 2013).

The experience of parenting following difficulties during parents' own childhood relationships is potentially challenging. Evidence suggests early relational trauma, negative recollections of parental care and subsequent adult attachment style may influence the quality and perception of the parent-child relationship. Furthermore, such difficulties are also indicated in the development of psychosis and schizotypy. Although such difficulties can influence parenting at any point, it is argued that pre-existing vulnerabilities such as those highlighted above may be exacerbated at times of stress. It is known that the postnatal period can be a particularly stressful time for new parents and this period may also exacerbate vulnerability to mental health difficulties (Murray, Cooper & Hipwell, 2003). Consequently, any association between schizotypy, attachment and parenting may be heightened during this period of parenting.

Aims of the study

Primary aim

The main aim of this study is to explore any relationships between schizotypy, attachment and parenting.

Hypotheses

1. There will be negative relationships between adult attachment and parenting self-efficacy/satisfaction and stress.
2. There will be positive relationships between adult attachment styles and schizotypy.

3. Schizotypy will mediate the relationship between attachment and parenting (see figure 1 below for a visual representation of the hypothesised associations between variables).

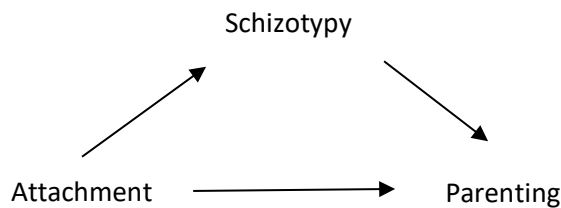


Figure 1: Visual representation of the model to be tested, where schizotypy mediates the direct effect of adult attachment on parenting.

Method

Design

This is a cross-sectional quantitative study using a non-clinical sample. Participants will be asked to complete a battery of six self-report measures online (detailed below in the measures section).

Participants

Inclusion: The inclusion criteria for this study is as follows:

- First time primary caregivers of a child from birth to 12 months old. This is a stressful period for new parents and is likely to exacerbate underlying attachment difficulties and indicators of schizotypy. The term ‘primary caregiver’ is used to encompass all those who may provide the main care for a new born infant, such as fathers.

- Mothers who return to work during the first 12 months are also included provided they have been, and continue to be, the primary caregiver.
- Adoptive parents and other primary caregivers such as aunts/uncles who have an infant placed with them during the first 12 months are also eligible to participate provided it is the first child they have taken the role of primary caregiver for.
- Sufficient command of written English to enable participants to complete the measures.

Exclusion: The exclusion criteria is as follows:

- Primary care-givers who have more than one child
- Primary care-givers whose child is more than 12 months' old
- Foster parents (as these placements are generally temporary)
- Grandparents who have guardianship/custody of their children's infants
- Participants who do not have sufficient command of written English

Recruitment

Recruitment for this study will take place online. The chief investigator will email the administrators of relevant websites aimed at new parents and request a link to the study be posted on their website and/or their social media accounts. For the purposes of recruitment, the study will be titled 'What affects the experience of parenting?' The email will include the participant information sheet (Appendix A) and rationale for the study and invite the organisation to request any further information/documentation they would like to review. Identified websites include netmums, bounty, babycentre, mother & baby, mumsnet, gurgle, new parent, parent dish, britmums, loved by parents, mojomums, parenting, dadzclub, thedadnetwork, new-dads and the National Childbirth Trust (NCT). Online advertisements

will be placed on various other platforms (e.g. twitter) via accounts held by the DClinPsy and the Department of Health Research. Eligibility to participate will be determined by the first question in the demographic questionnaire: are you a first time parent/caregiver? Participants who answer 'no' to this question will not have further questions made available to them and will be unable to proceed with the survey.

Plan B: Surestart centres

If it seems unlikely that the target sample size will be met 3 months into the data collection period (by mid-March) the chief investigator will contact Surestart centres to request they advertise the study. A poster advertisement for the study will be displayed with tear-off slips giving instructions on how to access the study (Appendix B). Additionally, the chief investigator will request to attend Surestart centres and mother and baby groups to meet with new parents and ask for participants. Participant information sheets will be given out along with instructions on how to access the study for those who may wish to access it online (i.e. one of the slips in Appendix B). Packs of hard copies of the measures and consent form (Appendix C) will be available for participants who cannot/do not wish to complete the study online. Participants can take these away with them and return them via a stamped, addressed envelope, which will be included. I will differentiate between data collected online and data collected via hard copy in the anonymised database.

Sample size

The study aims to recruit in excess of 82 participants as calculated by an a priori power calculation using G*Power. This sample size will enable detection of significant effects as small as $r = .3$, which is a moderate effect. The effect size of .3 was derived from an average of r-values from similar studies investigating attachment and schizotypy and

attachment and parenting. The recommended power of 0.80 and alpha level of 0.05 (Field, 2014) was used to complete the a priori calculation.

A minimum sample size of 82 is needed for the purposes of standard correlational and bivariate analyses (see power analysis), but we aim to recruit more participants (a maximum of 500) to enhance sensitivity in testing a mediation model e.g. following the Baron & Kenny (1986) 4 steps to establish possible mediation effects.

Procedure

Lancaster University's online survey software, Qualtrics, will be used to design and administer the study. When participants click on the link to the study they will be presented with the participant information sheet which will explain in lay terms why the study is being conducted and the aims of the study. Participants will then click a 'next' button which will take them to the consent form. This will ask participants to click a box next to each item to indicate they agree. Once consent has been gained, participants will click the next button to take them to the questions. The first questionnaire will ask for demographic information (see Appendix D) and subsequent pages will contain the measures. It is estimated the measures will take approximately 20 to 30 minutes to complete.

A debrief sheet (Appendix E) will be presented at the end of the study containing further relevant details about the study and contact details of organisations participants may contact if they require support. They will also be offered the option to receive a summary of the study and to be entered into a prize draw to win a £50 Amazon voucher. Participants will be asked to provide an email address and consent to be contacted.

Surestart centres

If participation is slow 3 months into recruitment, the chief investigator will contact managers of Surestart centres to arrange an appointment for the chief investigator to visit and discuss the study. If agreement is obtained from the centres, advertising materials will be given (Appendix B) for display with tabs to break off if parents wish to take the details home. Permission will also be sought to visit the centres at times when there are new parents attending to present the study and ask for participants. At such times, packs including a cover letter (Appendix F), hard copies of the participant information sheet, consent form, all the measures and the debrief form will be taken along. A stamped addressed envelope will be provided to return the measures and consent form, using the Lancaster University address. Participants wishing to receive a summary of the study and/or be entered into the prize draw will be asked to provide a means of contact when they return the measures (Appendix G). Participants will be advised to send this in a separate stamped, addressed envelope which will be provided. I do not anticipate many potential risks in visiting these centres as they are public places. I will not be visiting participants at their homes. However, I will ensure I adhere to Lancaster University's lone worker policy, specifically by agreeing a time to visit and sharing this with my field supervisor. I will also arrange to contact my field supervisor once I have left the centre, with a plan in place for if I do not make contact by a certain time. If I encounter any problems I will contact my supervisors.

Measures

Demographics questionnaire: Up to 15 questions asking participants for basic information such as age, gender, age and gender of their child, nationality and prior mental health conditions.

Parenting Sense of Competence Scale (PCOS) (Gibaud-Wallston & Wandersman, 1978, in Johnston & Mash, 1989): The PCOS is a 16-item scale that measures parents' sense of confidence and satisfaction with their parenting. Parents are asked to indicate their level of agreement with each item on a six-point scale from 1: strongly agree to 6: strongly disagree. Internal consistency is reported as adequate ranging from .75-.88 (Gilmore & Cuskelly, 2009).

Parental Stress Scale (Berry & Jones, 1995): This scale was developed as an alternative to the 101-item Parenting Stress Index. The items represent both positive and negative themes of parenthood. Parents indicate their level of agreement with 18 items on a five-point scale from 1: strongly disagree to 5: strongly agree. Reliability was reported as good with a coefficient alpha level of 0.83.

Experiences of Close Relationships Scale-Short Form (ECR-S) (Wei, Russell, Mallinckrodt & Vogel, 2007): The ECR-S is a 12-item scale used to measure adult attachment. Reliability is reported to be good with coefficient alpha levels of .78 for the anxiety subscale and .84 for the avoidance subscale. Participants are asked to indicate their level of agreement with each item on a seven-point scale from 1: strongly disagree to 7: strongly agree.

Schizotypal Personality Questionnaire – Brief Revised (SPQ-BR) (Cohen, Matthews, Najolia & Brown, 2010): The SPQ is a 32-item scale used to assess schizotypal traits organised into seven trait subscales: 1) odd beliefs or magical thinking, 2) unusual perceptual experiences, 3) excessive social anxiety, 4) odd or eccentric behaviour, 5) odd speech, 6) no close friends and constricted affect, and 7) ideas of reference and suspiciousness. Participants are asked to indicate their level of agreement with each item on a five-point scale

from 0: strongly disagree to 4: strongly agree. Internal reliability is reported to be ‘robust’ with a mean alpha coefficient of .91 (Callaway, Cohen, Matthews & Dinzeo, 2014).

Adverse Childhood Experiences Questionnaire (ACE) (Felitti et al, 1998): A 10-item screening questionnaire was developed from the results of this study to ascertain presence of trauma before the age of 18 years. The World Health Organisation have recently developed a lengthier version intended to measure ACE’s in all countries and explore associations with subsequent risk behaviours. Participants score out of 10 is made up by the number of different types of trauma they indicate they have experienced.

Statistical analysis

Correlational and multiple regression analyses will be used to test the strength of the relationships between the key variables (schizotypy, attachment, parenting, memories of parental bonding, trauma). A series of mediational analyses will then test for possible mediation models. Analyses will be carried out using appropriate software packages, e.g. SPSS.

Ethical considerations

Potential for distress: It is not anticipated that completing the measures will cause participants distress; however, there is always this potential. The current study includes a number of aspects to mitigate against any potential distress that may be caused. Participants will be advised in the participant information sheet that there may be some questions of a sensitive nature and that they are able to discontinue the study at any time should they feel distressed. A list of resources participants could contact if they need support at any time is

also included at the end of the participant information sheet. The resources suggested are the participants' GP, their health visitor or midwife, the Samaritans, the NSPCC and Family Lives which is a charity aimed at supporting families. These details have been included in the participant information sheet in case participants read this and then decide they do not wish to take part. Participants will be advised on the first page of the study to print/make a note of the 'resources in case of distress' from the information sheet in case they begin the study and decide not to continue. The debrief sheet will appear automatically at the end of the study for all participants.

Evidence suggests that the potential for research participants to experience distress is low, for example, Newman, Risch and Kassam-Adams (2006) undertook a review of studies regarding distress following being asked about trauma. They concluded that "evidence thus far suggests that there is a low likelihood of significant emotional harm from participating in trauma-focused studies" (p.36). Additionally, Griffin, Resick, Waldrop and Mechanic (2003) found that various types of trauma research methodology, including computer-administered questionnaires, were not rated as distressing to participants. The evidence suggests therefore there are few, if any, negative effects of participating in online research that include questions of a sensitive nature.

Confidentiality: Participation in this study is anonymous and participants will not be asked to disclose any identifying information, such as name or address. For those potential participants who I may meet face to face, anonymous participation is also guaranteed as I will not know if they actually go on to complete the questionnaires and therefore which data is theirs. For those participants who complete the measures on paper and send them through the post, I will not know who has sent them as no identifying information is asked for.

Participants will be advised to send their email addresses in a separate stamped, addressed envelope which will be provided. The data participants enter will be pooled with the responses of other participants and confidentiality is therefore maintained as responses cannot be traced to participants. The only identifying information participants are asked for, if they wish to give it, is their email address.

If participants provide their email address to be entered into the prize draw and/or to receive a summary of the study, these will be kept separately from the study data and stored in a password encrypted file on Lancaster University's secure server (H: Drive). This file will be deleted at the end of the study period, estimated to be in September 2016. If participants have completed hard copies of the questionnaires, these will be entered by the chief investigator onto the Qualtrics study. The paper copies will then be destroyed within five working days of receipt via secure shredding. If these participants have provided an email address to be entered into the prize draw or to receive a summary of the study, these will be stored with the other email addresses in the password encrypted file on Lancaster University's secure server. Any paper copies will then be destroyed via secure shredding.

Data storage: Data for this study will be collected on Qualtrics. The chief investigator will enter any paper copies of the consent form and measures into Qualtrics via VPN access to the secure H:Drive and paper copies will be destroyed using the DClinPsy secure shredding service. Once downloaded from this system for analysis all data will be stored on Lancaster University's secure server on the H:Drive. Data held on Lancaster ISS systems are stored in a resilient storage infrastructure which is dual homed in the ISS data centres (on site). Data will be shared with the supervisors of the project via Box cloud storage, which is a secure way to share data used by Lancaster University. The email addresses provided by participants will be stored in a separate password encrypted file on the H:Drive and will be deleted once the winner of the Amazon voucher has been notified and

the summary of results has been distributed in approximately September 2016. All other data will be stored by the DClinPsy programme for 10 years in accordance with Lancaster University guidance

Timescale

- Submit ethics documentation for review by the December 2015 FHMREC meeting.
- Recruitment and data collection January 2016 – May 2016
- Data analysis May-June 2016
- Submission – September-October 2016

References

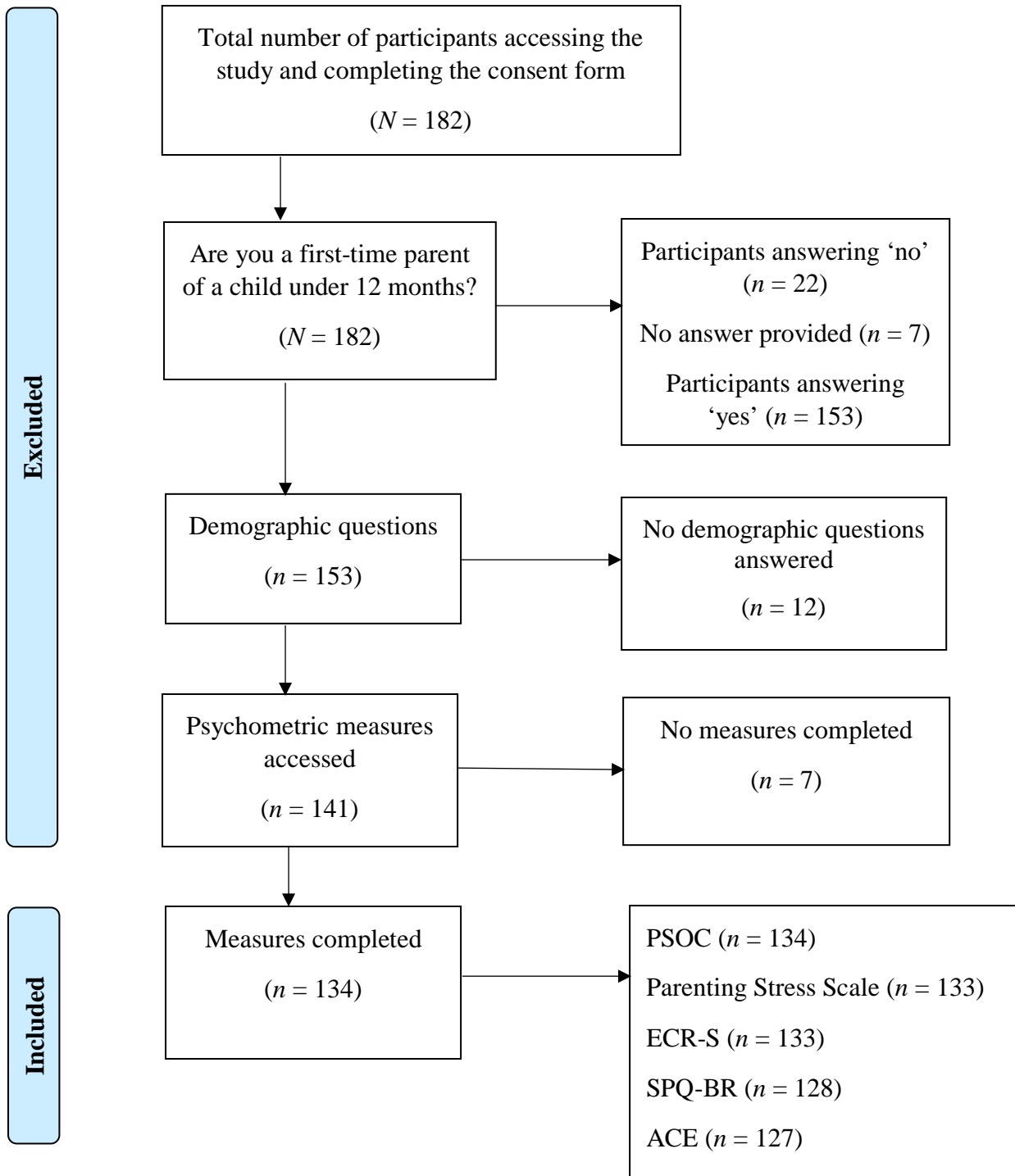
- Ainsworth, M. D. S., Blehai, M. C, Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum.
- Berry, J. O. & Jones, W. H. (1995). The Parental Stress Scale: Initial psychometric evidence. *Journal of Social and Personal Relationships*, 12(3), 463-472. DOI: 10.1177/0265407595123009
- Bowlby, J. (1969). *Attachment and loss: Vol. I. Attachment*. New York: Basic Books.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment. In J. A. Simpson & W. S. Roles (Eds.), *Attachment theory and close relationships* (46-76). New York: Guilford Press.
- Callaway, D. A., Cohen, A. S., Matthews, R. A., & Dinzeo, T. (2014). Schizotypal Personality Questionnaire – Brief Revised: Psychometric replication and extension. *Personality Disorders: Theory, Research and Treatment*, 5(1), 32-38. DOI: 10.1037/per0000041
- Cohen, A. S., Matthews, R. A., Najolia, G. M., & Brown, L. A. (2010). Toward a more psychometrically sound brief measure of schizotypal traits: Introducing the SPQ-Brief Revised. *Journal of Personality Disorders*, 24(4), 516–537. DOI: 10.1521/pedi.2010.24.4.516
- Dalton III, W. T., Frick-Horbury, D., & Kitzmann, K. M. (2006). Young adults' retrospective reports of parenting by mothers and fathers: Associations with current relationship quality. *The Journal of General Psychology*, 133(1), 5-18, DOI: 10.3200/GENP.133.1.5-18

- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., Marks, J. S. (1998). The relationship of adult health status to childhood abuse and household dysfunction. *American Journal of Preventive Medicine*, 14, 245-258. DOI: 10.1016/S0749-3797(98)00017-8. Questionnaire retrieved from: http://www.acestudy.org/yahoo_site_admin/assets/docs/ACE_Calculator-English.127143712.pdf
- Field, A. (2014). *Discovering Statistics Using IBM SPSS Statistics* (4th ed.). London: Sage Publications.
- Giakoumaki, S. G., Roussos, P., Zouraraki, C., Spanoudakis, E., Mavrikaki, M., Tsapakis, E. M., & Bitsios, P. (2013). Sub-optimal parenting is associated with schizotypic and anxiety personality traits in adulthood. *European Psychiatry*, 28, 254-260. DOI: 10.1016/j.eurpsy.2012.07.002
- Gilmore, L. & Cuskelly, M. (2009). Factor structure of the Parenting Sense of Competence scale using a normative sample. *Child: Care, Health and Development*, 35(1), 48-55. DOI: :10.1111/j.1365-2214.2008.00867.x
- Griffin, M. G., Resick, P. A., Waldrop, A. E., and Mechanic, M. B. (2003). Participation in trauma research: Is there evidence of harm? *Journal of Traumatic Stress*, 16(3), 221-227. DOI: 10.1023/A:1023735821900
- Hazan, C. & Shaver, P. (1987). Romantic love conceptualised as an attachment process. *Journal of Personality and Social Psychology*, 52(3), 511-514. DOI: 10.1037/0022-3514.52.3.511

- Johnston, C. & Mash, E. J. (1989). A measure of parenting satisfaction and efficacy. *Journal of Clinical Child Psychology*, 18(2), 167-175. DOI: 10.1207/s15374424jccp1802_8
- Jones, J.D., Cassidy, J., & Shaver, P.R. (2015). Parents' self-reported attachment styles: A review of links with parenting behaviours, emotions and cognitions. *Personality and Social Psychology Review*, 19(1), 44-76. DOI: 10.1177/1088868214541858
- Kernot, J., Olds, T., Lewis, L. K., & Maher, C. (2015). Test-retest reliability of the English version of the Edinburgh Postnatal Depression Scale. *Archive of Women's Mental Health*, 18, 255-257. DOI: 10.1007/s00737-014-0461-4
- Korver-Nieberg,, N., Berry, K., Meijer, C.J., & de Haan, L. (2014). Adult attachment and psychotic phenomenology in clinical and non-clinical samples: A systematic review. *Psychology and Psychotherapy Theory, Research and Practice*, 87, 127-154. DOI: 10.1111/papt.12010
- Meins, E., Jones, S. R., Fernyhough, C., Hurndall, S., & Koronis, P. (2008). Attachment dimensions and schizotypy in a non-clinical sample. *Personality and Individual Differences*, 44, 1000-1011. DOI: 10.1016/j.paid.2007.10.026
- Murray, L., Cooper, P., & Hipwell, A. (2003). Mental health of parents caring for infants. *Archives of Women's Mental Health*, 6(2), 71-77. DOI: 10.1007/s00737-003-0007-7
- Nelson, M. T., Seal, M. L., Pantelis, C., & Phillips, L. J. (2013). Evidence of a dimensional relationship between schizotypy and schizophrenia: A systematic review. *Neuroscience and Biobehavioural Reviews*, 37, 317-327. DOI: 10.1016/j.neubiorev.2013.01.004

- Newman, E., Risch, E., and Kassam-Adams, N. (2006). Ethical issues in trauma-related research: A review. *Journal of Empirical Research on Human Research Ethics*, 1(3), 29-46. DOI: 10.1525/jer.2006.1.3.29
- Parker, G., Roussos, J., Hadzi-Pavlovic, D., Mitchell, P., Wilhelm, K., and Austin, M. P. (1997). The development of a refined measure of dysfunctional parenting and assessment of its relevance in patients with affective disorders. *Psychological Medicine*, 27(5), 1193-1203. DOI: 10.1017/S003329179700545X
- Velikonja, T., Fisher, H. L., Mason, O., & Johnson, S. (2015). Childhood trauma and schizotypy: a systematic literature review. *Psychological Medicine*, 45, 947-963. DOI: 10.1017/S0033291714002086
- Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. L. (2007). The Experiences in Close Relationship Scale (ECR)-Short Form: Reliability, validity, and factor structure. *Journal of Personality Assessment*, 88(2), 187-204. DOI: 10.1080/00223890701268041.
- Willing, U., Heiden, A. M., Meszaros, K., Formann, A. K., & Aschauer, H. N. (2002). Maternal bonding behaviour in schizophrenia and schizoaffective disorder, considering premorbid personality traits. *Australian & New Zealand Journal of Psychiatry*, 36(5), 663-668. DOI: 10.1046/j.1440-1614.2002.01038

Appendix D: Flow diagram depicting number of participants at each stage.



Abbreviations: PSOC, Parenting Sense of Competence Scale; ECR-S, Experiences in Close Relationships Scale – Short Form; SPQ-BR, Schizotypal Personality Questionnaire – Brief Revised; ACE, Adverse Childhood Experiences Questionnaire.

Appendix E: Previous Research used to Calculate Effect Size

Attachment and schizotypy/psychosis

Paper	<i>r</i> -value	Notes
Berry, Band, Corcoran, Barrowclough, & Wearden (2007)	$M = .32/.33$	Attachment anxiety/avoidance and schizotypal symptoms
Berry, Barrowclough, & Wearden (2008)	.20/.31	Attachment anxiety/avoidance and scores on the Positive and Negative Syndrome Scale (PANSS)
Berry, Barrowclough, & Wearden (2009)	.27	Psychotic symptoms & attachment avoidance
Korver-Nieberg, Berry, Meijer, Haan, & Ponizovsky (2015)	.15/.13	Attachment anxiety/avoidance with total PANSS score
Kvrgic et al (2011)	.13/.18	Attachment anxiety/avoidance and positive symptoms
	-.01/.02	Attachment anxiety/avoidance and negative symptoms
Pickering, Simpson, & Bentall (2008)	.48/.24	Attachment anxiety/avoidance and paranoia
	.23/.15	Attachment anxiety/avoidance and hallucinations
Tiliopoulos & Goodall (2009)	.32/.10	Attachment anxiety/avoidance and positive schizotypy
	.25/.37	Attachment anxiety/avoidance and negative schizotypy
Wickham, Sitko, & Bentall (2015)	.22/.22	Attachment anxiety/avoidance and hallucinations (PANSS, total sample)
	.39/.27	Attachment anxiety/avoidance and persecution (PANSS, total sample)
$M = .23$		

Attachment and parenting

Paper	<i>r</i> -value	Notes
Berant, Mikulincer & Florian (2001)	.33/-.23	Correlation between anxious/avoidant attachment and psychological distress (control group)
	-.25/-.26	Anxious/avoidant attachment and ability to cope (control group)
Calvo & Bianco (2015)	-.63/-.26	Attachment anxiety and parenting satisfaction/self-efficacy
	-.40/-.26	Attachment avoidance and parenting satisfaction/self-efficacy

ATTACHMENT, PARENTING AND SCHIZOTYPY

Fernandes, Muller, & Rodin (2012)	.42/.41	Attachment anxiety/avoidance and parenting stress
Howard (2010)	.31	Paternal secure attachment and parenting stress
	.22	Paternal secure attachment and parenting efficacy
Kohlhoff & Barnett (2013)	-.25	Attachment avoidance and parental self-efficacy
	-.33	Attachment anxiety & parental self-efficacy
Moreira, Gouveia, Carona, Silva, & Canavarro (2015)	.35/.37	Attachment anxiety/avoidance with parenting stress
Rholes, Simpson & Friedman (2006)	.28/.33	Attachment anxiety/avoidance and parenting stress
	-.08/-.17	Attachment anxiety/avoidance and parental meaning/satisfaction
<i>M</i> = .31		

Appendix F: Journal guidelines for Authors

British Journal of Psychology Author Guidelines

The Editorial Board of the British Journal of Psychology is prepared to consider for publication:

- (a) reports of empirical studies likely to further our understanding of psychology
- (b) critical reviews of the literature
- (c) theoretical contributions Papers will be evaluated by the Editorial Board and referees in terms of scientific merit, readability, and interest to a general readership.

All papers published in The British Journal of Psychology are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

1. Circulation

The circulation of the Journal is worldwide. Papers are invited and encouraged from authors throughout the world.

2. Length

Papers should normally be no more than 8000 words (excluding the abstract, reference list, tables and figures), although the Editor retains discretion to publish papers beyond this length in cases where the clear and concise expression of the scientific content requires greater length.

3. Submission and reviewing

All manuscripts must be submitted via [Editorial Manager](#). The Journal operates a policy of anonymous (double blind) peer review. We also operate a triage process in which submissions that are out of scope or otherwise inappropriate will be rejected by the editors without external peer review to avoid unnecessary delays. Before submitting, please read the [terms and conditions of submission](#) and the [declaration of competing interests](#). You may also like to use the [Submission Checklist](#) to help you prepare your paper.

4. Manuscript requirements

- Contributions must be typed in double spacing with wide margins. All sheets must be numbered.
- Manuscripts should be preceded by a title page which includes a full list of authors and their affiliations, as well as the corresponding author's contact details. You may like to use [this](#) template. When entering the author names into Editorial Manager, the corresponding author will be asked to provide a CRediT contributor role to classify the role that each author played in creating the manuscript. Please see the [Project CRediT website](#) for a list of roles.
- The main document must be anonymous. Please do not mention the authors' names or affiliations (including in the Method section) and refer to any previous work in the third person.
- Tables should be typed in double spacing, each on a separate page with a self-explanatory title. Tables should be comprehensible without reference to the text. They should be placed at the end of the manuscript but they must be mentioned in the text.
- Figures can be included at the end of the document or attached as separate files, carefully labelled in initial capital/lower case lettering with symbols in a form consistent with text use. Unnecessary background patterns, lines and shading should be avoided. Captions should be

listed on a separate sheet. The resolution of digital images must be at least 300 dpi. All figures must be mentioned in the text.

- All articles should be preceded by an Abstract of between 100 and 200 words, giving a concise statement of the intention, results or conclusions of the article.
- For reference citations, please use APA style. Particular care should be taken to ensure that references are accurate and complete. Give all journal titles in full and provide DOI numbers where possible for journal articles.
- SI units must be used for all measurements, rounded off to practical values if appropriate, with the imperial equivalent in parentheses.
- In normal circumstances, effect size should be incorporated.
- Authors are requested to avoid the use of sexist language.
- Authors are responsible for acquiring written permission to publish lengthy quotations, illustrations, etc. for which they do not own copyright. For guidelines on editorial style, please consult the APA Publication Manual published by the American Psychological Association.

If you need more information about submitting your manuscript for publication, please email Melanie Seddon, Managing Editor (bjop@wiley.com) or phone +44 (0) 1243 770 108.

5. Supporting Information

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Chapter 3: Critical Appraisal

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The two papers that comprise this thesis are intended to add to the existing literature regarding what affects the experience of parenting and how parenting may affect schizotypal symptoms. This critical appraisal will firstly summarise the results from each paper, then make links between them through the variables of attachment and parenting stress. Secondly, the strengths and limitations of each paper will be discussed with speculation on how these may have affected the results and suggestions on what I could have done differently. This will lead into reflections on methodology, specifically regarding key decisions I made and consideration of future research in this area. Finally, I will conclude with my personal reflections on the thesis and what I have learned from the process.

Summary of Results

The first paper aimed to systematically review the literature regarding the experience of historical childhood sexual abuse (CSA) and later parenting stress. A key difficulty of conducting this review was the lack of homogeneity in definition and measurement of CSA across studies, making conclusions inferred tentative. However, the results suggested that contact-only CSA may produce significant associations with parenting stress and that studies including both contact and non-contact CSA may need larger sample sizes to detect smaller effects. Several studies suggested elevated stress on the parenting domain of the PSI but not the child domain, indicating participants were more likely to attribute parenting stress to their own characteristics rather than the characteristics of the child. Furthermore, depression was found to be a significant variable in the association between CSA and parenting stress, suggesting experiences of depression may mediate this relationship. Unfortunately, the analysis of moderators between CSA and parenting stress was limited, so no conclusions could be made regarding factors which may affect the strength of this relationship.

The second paper was a cross-sectional empirical study which investigated the associations between attachment, parenting and schizotypy. The specific hypotheses tested

were grouped into three sets and an exploratory mediation model was proposed based on existing theory: (Set H1) there will be a positive association between schizotypy and attachment anxiety, attachment avoidance and childhood trauma, (Set H2) there will be a positive association between parenting stress and attachment anxiety, attachment avoidance and trauma, but a negative association between parenting competence, attachment anxiety/avoidance and trauma, (Set H3) there will be a positive association between parenting stress and schizotypy and a negative association between parenting competence and schizotypy. Exploratory analyses aimed to test whether parenting variables would mediate any associations between schizotypy and earlier relational experiences (trauma and attachment).

The results supported all hypotheses, except the association between trauma and the parenting variables which was found not to be significant. The proposed mediation model, that parenting stress and competence would mediate the association between attachment anxiety/avoidance and schizotypy was partially supported. Parenting stress was a significant mediator between insecure attachment and schizotypy, but parenting competence was not significant in this parallel mediation model. The findings add to the existing understanding of factors that may exacerbate schizotypal symptoms by suggesting insecure attachment predicts elevated stress related to the demands of parenting, which in turn increases the experience of schizotypy.

Attachment and parenting stress were key variables in both papers. Firstly, the discussion section of the systematic review linked the results to attachment theory, suggesting this may have been the missing link in the results of the included studies, between CSA and later parenting stress, and which may account for the variation in results. CSA has been linked to insecure attachment (Kwako, Noll, Putnam, & Trickett, 2010) and it may be this that has the effect on parenting stress, making the effect of CSA on parenting stress indirect.

The results from the empirical paper support this suggestion as insecure attachment was associated with parenting stress. Secondly, parenting stress itself was identified as a mediator between insecure attachment and schizotypy in the empirical paper. Bringing the results of the two papers together, this suggests a more complex model in that CSA may be the predictor variable for schizotypy (as is supported by previous research, e.g. Velikonja, Fisher, Mason, & Johnson, 2015) with attachment insecurity and parenting stress mediating this association. Hayes (2013) describes numerous possible mediation and moderation models so theoretically it is possible that insecure attachment may mediate the association between CSA and schizotypy and parenting stress may moderate the pathway between insecure attachment and schizotypy in such a model. However, this is speculative and, as has been highlighted in both papers, other variables such as depression may have exerted an effect which will be discussed in more detail below.

Strengths and Limitations

The systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement (Liberati et al., 2009). This is a strength of the review as transparency in the reporting of systematic reviews enables users to judge the strength of the review and allows replication of search strategies (Moher, Simera, Schulz, Hoey, & Altman, 2008). Studies included in the review were assessed for quality, the results of which were used to critically appraise the findings of each study. This enabled a judgement on the strength of the evidence to be made and indicated several areas for further research. The review focused on CSA specifically which highlighted the lack of standardised definitions and measurement of CSA between the studies. This is an important finding but this also made it difficult to compare studies and draw firm conclusions about the results. The inclusion of contact-only CSA in some studies and both contact and non-contact CSA in others poses difficulties in classifying what constitutes CSA. This is a

difficulty faced by clinicians and researchers alike, particularly regarding quantitative research into CSA. The use of predetermined questions may make it difficult for participants to convey their personal experiences of CSA and therefore they resort to fitting their experiences to the questions being asked (Gibson & Morgan, 2013). This may not provide accurate representations of the participants' experiences, making comparison between studies even more problematic. However, some of these difficulties may be alleviated if consistency of measurement was attained across studies.

The empirical paper proposed an exploratory mediation model, the significant results of which add to the existing evidence base for what may exacerbate schizotypal symptoms. The study obtained a relatively large, adequately powered sample and using online methods of data collection enabled the recruitment of a more geographically diverse sample than would have been possible through traditional recruitment methods. Additionally, a homogenous sample was attained by focusing on first time parents with a child under 12 months old. However, the empirical study experienced several limitations which are discussed here in more detail.

Firstly, the study was a cross-sectional design which limits the generalisability of results and the inferences that can be made. Though cross-sectional studies do not provide indications of cause and effect, Hayes (2013) suggests mediation is a causal model. This is a contrast in terms for the current study and deserves further consideration and clarity on what conclusions can be drawn from the results. Kraemer, Yesavage, Taylor and Kupfer (2000) discuss how cross-sectional studies may produce misleading inferences about cause and effect, particularly with regard to developmental processes. To mitigate this, the current study makes no inferences regarding the stability of the association between the variables measured beyond the postpartum period, or beyond the study sample. The results of this study therefore may be assumed to represent a causal pathway for the sample used at the

point in time the measures were completed. Given the time constraints for the Doctorate in Clinical Psychology thesis, it was not feasible to consider alternative methodologies so further research is needed to verify the results of this study, as discussed below.

Secondly, participation in the empirical study was via response to an online advert, which increases the risk of self-selection bias and failing to access all potential participants (Bethlehem, 2010). Participants in the current study were limited to those who had access to the internet, which means some potential participants were excluded on this basis. Additionally, research shows individuals differ in the type of activity they access online. For example, young females are more likely to use the internet for communication and social media than males (Van Deursen, Van Dijk, & Ten Klooster, 2015). The target population in this study was parents with a child under 12 months old, which means online recruitment was appropriate to capture mothers with a young child, though it is possible that this recruitment strategy did not capture responses as much from fathers. Socioeconomic inequalities may also affect internet usage (e.g. Aerschot & Rodousakis, 2008; Lee, Park, & Hwang, 2015), with individuals of lower socioeconomic status less likely to access the internet. The demographic data from this study supports this research as a significant proportion of respondents had a high education level and most were either employed or on maternity leave. This means the results cannot be generalised to populations not represented in this study. Nevertheless, the use of web surveys may have some benefits, for example by removing the effect of researchers' presence on participants' responses, possibly resulting in more honest expressed opinions (Simmons & Bobo, 2015). However, to improve the demographic constellation of the participants more active recruitment in lower socioeconomic areas may have added greater variation to the data and I would have included this in hindsight.

Thirdly, the empirical study used self-report measures which research suggests are susceptible to several methodological difficulties. Morsbach and Prinz (2006) outline the

possibilities of bias with parenting self-report, suggesting lack of corroborating evidence to check accuracy of reporting, variations in the internal consistency of measurement tools and the sensitive nature of some of the questions as factors affecting the validity of parental self-report. Furthermore, under or over-reporting of difficulties on self-report measures is common due to social desirability; that is the desire to present oneself in a positive light to prevent judgement from others. For example, Bornstein et al. (2015) found consistencies in socially desirable responding across nine countries for parents responding to self-report measures of parenting. Compounding the possibility of socially desirable reporting is the potential for some participants in the current study to be experiencing PPD, which may increase negative reporting bias. The results from this study may therefore not be an accurate reflection of participants' true experiences, with past research suggesting participants may either minimise their difficulties or be more inclined to respond negatively due to depression bias.

Such problems add to the potential for common method variance which is acknowledged as an issue when using self-report measures in cross-sectional designs (Lindell & Whitney, 2001). Correlations between the questionnaires may either be higher or lower than they actually are due to participants completing several questionnaires at the same time point regarding different perceptual and temporal issues. For example, in the current study participants were asked to rate themselves on measures regarding their own parenting abilities then asked to recall experiences from early childhood which were about their experiences of being parented as a child. The order of measures presented therefore may have affected what traumas participants were willing to report (as this was the final questionnaire), having reflected on their own experiences of being a parent. Furthermore, each measurement tool has some measurement error and each participant brings the same response bias to each questionnaire they complete, adding to the possibility of common

method variance. Common method variance may be addressed in several ways, either through the design of the research or with post hoc analyses (Chang, Witteloostuijn, & Eden, 2010) and it is possible common method variance may have affected the results in this study. The fact the current study did not control for common method variance or test for it post hoc is another limitation of the study and in hindsight this should have been considered during the design of the study.

Finally, it is also possible that other confounding variables which were not measured may account for the significance of the results in the empirical study. One possibility is alternative mental health difficulties being experienced by the participants, such as depression. Recruiting only first time mothers with a child under 12 months means it is possible some participants were experiencing Postpartum Depression (PPD). Depression may have skewed the results obtained in the current study as research has shown it can lead to negative reporting bias (e.g. Moussavi et al., 2007). Participants experiencing depression may have endorsed more negative items on the measures included in the current study, or over-reported difficulties, for example with parenting stress. A measure of depression was originally included in the battery of psychometric measures identified for the empirical study (the Edinburgh Postnatal Depression Scale), but it was discussed and agreed with my supervisors that inclusion of too many measures risked participant fatigue and so it was removed. In hindsight, it would have been useful to retain this measure as it may have added important information to the study, so I would have left this in if I had my time again.

Reflections on Methodological Issues

During the design of the empirical study I made several decisions which I will discuss in detail here. Firstly, I agreed with my supervisors that data would be collected online. Using web surveys is a time efficient method of data collection (Denissen, Neumann, & Van Zaln, 2010) which was an important consideration given the time constraints for the thesis. I

appreciated the wide audience that the advert for my study would reach using social media and genuinely thought this was the best method of recruitment for my target sample.

Reflecting on the time when I was a new mother I would perhaps have found it too stressful to commit to a meeting or interview when I did not have to. I thought therefore that being able to complete a study online, for example if mothers are using social media while their baby naps, was a good way to capture responses from mothers who otherwise may not have participated.

A second key decision regards the measures selected for the study. All the measures I chose were continuous except for the measure of trauma selected – the Adverse Childhood Experiences (ACE) Questionnaire (Felitti et al., 1998), which was categorical. My lack of previous experience with statistics meant I did not realise during the study design period that the ACE measure would not be straightforward to analyse with the other measures, and could not be used as a mediating variable as it was categorical. During the design of the study I decided upon the ACE given its increasing use as a screening tool and its recent endorsement by the World Health Organisation (WHO), which is currently validating the Adverse Childhood Experiences International Questionnaire (ACE-IQ) for use in broader surveys of health. Additionally, the ACE focuses on interpersonal childhood adversities whereas some other measures include traumas such as natural disasters or acts of war (e.g. the Life Events Checklist – 5, Weathers et al., 2013). Given the aim of the empirical study I decided the ACE was preferable. The Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998) would have been my first choice due to its reported validity and reliability, but I could not use this online due to copyright law.

However, similar to the difficulties in measuring CSA, the ACE relies on participants to make judgements regarding their experiences, and retrospective reports of early childhood traumas are arguably unreliable (Hardt & Rutter, 2004). Presenting participants with a

questionnaire that required them to respond either yes or no may have resulted in false positives, for example a participant may have decided their experience was indicative of a trauma whereas others may not classify it as such, or false negatives where a participant denied experience of adversity as their experience did not 'fit' into yes or no. Overcoming this issue when using self-report measures of trauma is an ongoing issue for researchers, but in hindsight I believe such a categorical measure is perhaps not sensitive enough for the purposes of the study. Should such research be conducted in the future a continuous measure which allows participants to record frequency and/or severity of each type of adversity may yield more accurate data.

Secondly, the original ethics application for this study included the Measure of Parental Style (MOPS; Parker et al., 1997) instead of the ACE Questionnaire. The initial reason for including this was because the parental style of low care/high over-protection in memories of parental bonding has been shown to associate with schizotypal traits (Giakoumaki et al., 2013) and attachment style (Hazan & Shaver, 1987). However, in discussion with my supervisors it was agreed that recollection of parental style may not add data of significant value to the study given I was already measuring attachment style. We decided that as trauma is indicated in both the development of attachment difficulties and schizotypy this measure may add more value to the study, hence the measure was exchanged for the ACE measure.

Finally, a key decision I made was regarding the use of participants' total scores on the Schizotypal Personality Questionnaire – Brief Revised (SPQ-BR; Cohen, Matthews, Najolia & Brown, 2010), rather than the subscale scores. A review of the literature which has used the SPQ-BR indicated the questionnaire has been used differently depending on the aims of each particular study. The mediation model proposed in the empirical study was exploratory, so theoretically the total score would indicate if the model was significant and

future research could investigate the model using subscale scores. However, I calculated Cronbach's alphas for each subscale and the total score of the SPQ-BR to explore the reliability of the different subscales and the overall total scale. The alpha for the total score was .94 which was superior to the alphas calculated for each of the subscales which ranged between .77 and .91, therefore it was discussed and agreed with my supervisors that the SPQ-BR total score should be used in all analyses. It is possible that analyses using the subscale scores may reveal different patterns of results as research has indicated different associations between attachment anxiety/avoidance and positive/negative schizotypal symptoms (e.g. Berry, Wearden, Barrowclough, & Liversidge, 2006; Sheinbaum, Bedoya, Ros-Morente, Kwapil, & Barrantes-Vidal, 2013). However, future research may investigate these relationships further.

Future Research

Directions for future research have been discussed in each paper separately so here the most salient points will be identified following the detailed discussion presented above. Firstly, bringing together the results of the two papers highlights further possible avenues of research. Investigating the role of attachment in the association between CSA and later parenting stress may explain some of the inconsistencies found in the results of the systematic review and therefore studies should explore attachment as a possible mediator of this relationship. Furthermore, combining the results of the two papers suggests a more complex mediation model with possible moderation effects. Theoretically, CSA predicts schizotypy and attachment insecurity may be a mediator of this relationship. It is suggested that parenting stress may moderate the pathway between attachment insecurity and schizotypy. Such a model has not been tested previously and may provide a more comprehensive explanation of possible pathways. Future research may also consider using the different

subscales of the SPQ-BR to explore if parenting stress mediates associations between different types of insecure attachment and the different subscales on this measure.

Additionally, mediation analysis with depression as a mediator may enhance our understanding of the links between early life adversities, including trauma and disrupted attachments, and later life difficulties, including mental health problems and parenting stress. The literature review identified depression appeared to have a key role in the relationship between CSA and parenting stress, though actual mediation analysis was limited. Similarly, a possible confound for the empirical paper may have been the presence of postpartum depression (PPD) for the participants. Therefore, both areas of research would benefit from further exploration of depression and the impact it has on the associations between early life adversities and later life difficulties. Depression may also be added into the more complex mediation/moderation model suggested above.

Finally, subsequent research designs should consider the methodological limitations acknowledged in both the systematic review and the empirical study. The systematic review identified a severe lack of consistency regarding the measurement of CSA so any studies investigating CSA in the future should aim to use a valid and reliable measure of this, such as the Childhood Trauma Questionnaire (CTQ). Additionally, explicit definitions of CSA should be reported in the study to enable comparison of studies exploring similar constructs of CSA, for example, contact versus non-contact abuse. With regard to the empirical study, mixed methods of data collection may be considered which would limit the possibility of common method variance, for instance observational assessments of parenting or interview based measures of attachment. This would enable the independent and dependent variables to be constructed using different methods which may moderate potential response bias. Recruitment from different sources would also provide greater variation in the data and may moderate any effects on the results in the current study from all participants completing the

measures online. However, these alternatives would be more resource-intensive so future research would need to balance these needs carefully. Furthermore, future studies should also consider longitudinal research designs which may provide evidence for a developmental trajectory of how parenting stress mediates the association between insecure attachment and schizotypy over time. This would also reduce the possibility of common method variance.

Reflections

I am a mother of two young children which is what attracted me to the topics for both the empirical paper and the systematic review. My experience of parents I have encountered since becoming a mother has provoked my interest in how early life experiences affect how parents function in, and experience, their parenting role. Although a quantitative approach was initially unfamiliar to me and therefore quite challenging, I enjoyed the process and found the data analysis particularly interesting. The advantages of conducting quantitative research in this instance was to test a new model which had been constructed from existing theory. This would not have been possible using qualitative methodologies, though the experiences of new parents regarding the variables included in this study would be important to explore qualitatively now that the model was found to be significant. A mixed methods approach to research questions would perhaps be the ideal solution and one that I would have liked to explore if time and resources were not limited. For example, a quantitative study to test the proposed model then a qualitative approach to explore how participants make sense of their experiences. Personally, my experience of conducting this quantitative study has improved my confidence in my abilities to carry out research, enhanced my skills in understanding and critiquing quantitative research methodologies more thoroughly, and allowed me to balance my previous experience of conducting qualitative research. I can now appreciate the advantages and disadvantages of both quantitative and qualitative approaches and how they may be used to complement each other if I undertake future research.

References

- Aerschot, L. V. & Rodousakis, N. (2008). The link between socio-economic background and Internet use: barriers faced by low socio-economic status groups and possible solutions. *Innovation: The European Journal of Social Science Research*, 21(4), 317-351. doi: 10.1080/13511610802576927
- Bernstein, D. P, and Fink, L. (1998). Childhood Trauma Questionnaire: A retrospective self-report manual. San Antonio, TX: The Psychological Corporation.
- Berry, K., Wearden, A., Barrowclough, C., & Liversidge, T. (2006). Attachment styles, interpersonal relationships and psychotic phenomena in a non-clinical student sample. *Personality and Individual Differences*, 41(4), 707-718. doi: 10.1016/j.paid.2006.03.009
- Bethlehem, J. (2010). Selection bias in web surveys. *International Statistical Review*, 78(2), 161-188. doi: 10.1111/j.1751-5823.2010.00112.x
- Bornstein, M. H., Putnick, D. L., Lansford, J. E., Pastorelli, C., Skinner, A. T., Sorbring, E., ... Oburu, P. (2015). Mother and father socially desirable responding in nine countries: Two kinds of agreement and relations to parenting self-reports. *International Journal of Psychology*, 50(3), 174-185. doi: 10.1002/ijop.12084
- Chang, S. J., Witteloostuijn, A. V., & Eden, L. (2010). From the Editors: Common method variance in international business research. *Journal of International Business Studies*, 41(2), 178-184. doi: 10.1057/jibs.2009.88
- Cohen, A. S., Matthews, R. A., Najolia, G. M., & Brown, L. A. (2010). Toward a more psychometrically sound brief measure of schizotypal traits: Introducing the SPQ

- Brief Revised. *Journal of Personality Disorders*, 24(4), 516-537. doi: 10.1521/pedi.2010.24.4.516
- Denissen, J. J. A., Neumann, L., & Van Zalk, M. (2010). How the internet is changing the implementation of traditional research methods, people's daily lives, and the way in which developmental scientists conduct research. *International Journal of Behavioural Development*, 34(6), 564-575. doi: 10.1177/0165025410383746
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... Marks, J. S. (1998). Relationships of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Preventative Medicine*, 14(4), 245-258. doi: 10.1016/S0749-3797(98)00017-8
- Giakoumaki, S. G., Roussos, P., Zouraraki, C., Spanoudakis, E., Mavrikaki, M., Tsapakis, E. M., & Bitsios, P. (2013). Sub-optimal parenting is associated with schizotypic and anxiety personality traits in adulthood. *European Psychiatry*, 28, 254-260. doi: 10.1016/j.eurpsy.2012.07.002
- Gibson, K. & Morgan, M. (2013). Narrative research on child sexual abuse: Addressing perennial problems in quantitative research. *Qualitative Research in Psychology*, 10(3), 298-317. doi: 10.1080/14780887.2011.606597
- Hardt, J. & Rutter, M. (2004). Validity of adult retrospective reports of adverse childhood experiences: Review of the evidence. *Journal of Child Psychology and Psychiatry*, 45(2), 260-273. doi: 10.1111/j.1469-7610.2004.00218.x
- Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis [electronic resource]: A regression-based approach*. New York, NY: The Guilford Press.

- Hazan, C. & Shaver, P. (1987). Romantic love conceptualised as an attachment process. *Journal of Personality and Social Psychology*, 52(3), 511-514. doi: 10.1037/0022-3514.52.3.511
- Kraemer, H. C., Yesavage, J. A., Taylor, J. L., & Kupfer, D. (2000). How can we learn about developmental processes from cross-sectional studies, or can we? *The American Journal of Psychiatry*, 157(2), 163-171. doi: 10.1176/appi.ajp.157.2.163
- Kwako, L. E., Noll, J. G., Putnam, F. W., & Trickett, P. K. (2010). Childhood sexual abuse and attachment: An intergenerational perspective. *Clinical Child Psychology and Psychiatry*, 15(3), 407-422. doi: 10.1177/1359104510367590
- Lee, H., Park, N., & Hwang, Y. (2015). A new dimension of the digital divide: Exploring the relationship between broadband connection, smartphone use and communication competence. *Telematics and Informatics*, 32(1), 45-56. doi: 10.1016/j.tele.2014.02.001
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gotzsche, P. C., Ioannidis, J. P. A., . . . Moher, D. (2009). The PRISMA Statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *Journal of Clinical Epidemiology*, 62(10), e1-e34. doi: 10.1016/j.jclinepi.2009.06.006
- Lindell, M. K. & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research design. *Journal of Applied Psychology*, 86(1), 114-121. doi: 10.1037//0021-9010.86.1.11

- Moher, D., Simera, I., Schulz, K. F., Hoey, J., & Atlman, D. G. (2008). Helping editors, peer reviewers and authors improve the clarity, completeness and transparency of reporting health research. *BMC Medicine*, 6(13). doi: 10.1186/1741-7015-6-13
- Morsbach, S. K. & Prinz, R. J. (2006). Understanding and improving the validity of self-report of parenting. *Clinical Child and Family Psychology Review*, 9(1), 1-21. doi: 10.1007/s10567-006-0001-5
- Moussavi, S., Chatterji, S., Verdes, E., Tandon, A., Patel, V., & Ustun, B. (2007). Depression, chronic diseases, and decrements in health: Results from the World Health Surveys. *The Lancet*, 370(9590), 851-858. doi: 10.1016/S01406736(07)61415-9
- Parker, G., Roussos, J., Hadzi-Pavlovic, D., Mitchell, P., Wilhelm, K., & Austin, M. P. (1997). The development of a refined measure of dysfunctional parenting and assessment of its relevance in patients with affective disorders. *Psychological Medicine*, 27(5), 1193-1203. doi: 10.1017/S003329179700545X
- Sheinbaum, T., Bedoya, E., Ros-Morente, A., Kwapil, T. R., & Barrantes-Vidal, N. (2013). Association between attachment prototypes and schizotypy dimensions in two independent non-clinical samples of Spanish and American young adults. *Psychiatry Research*, 210(2), 408-413. doi: 10.1016/j.psychres.2013.07.020
- Simmons, A. D. & Bobo, L. D. (2015). Can non-full-probability internet surveys yield useful data? A comparison with full-probability face-to-face surveys in the domain of race and social inequality attitudes. *Sociological Methodology*, 45(1), 357-387. doi: 10.1177/008117501557009

- Van Deursen, A. J. A. M., van Dijk, J. A. G. M., & ten Klosster, P. M. (2015). Increasing inequalities in what we do online: A longitudinal cross sectional analysis of internet activities among the Dutch population (2010 to 2013) over gender, age, education, and income. *Telematics and Informatics*, 32(2), 259-272. doi: 10.1016/j.tele.2014.09.003
- Velikonja, T., Fisher, H. L., Mason, O., & Johnson, S. (2015). Childhood trauma and schizotypy: a systematic literature review. *Psychological Medicine*, 45, 947-963. doi:10.1017/S0033291714002086
- Weathers, F. W., Blake, D. D., Schnurr, P. P., Kaloupek, D. G., Marx, B. P., & Keane, T. M. (2013). *The Life Events Checklist for DSM-5 (LEC-5)*. Retrieved from: http://www.ptsd.va.gov/professional/assessment/te/measure/life_events_checklist.asp
- World Health Organisation (2009). *The Adverse Childhood Experiences International Questionnaire (ACE-IQ)*. Retrieved from: http://www.who.int/violence_injury_prevention/violence/activities/adverse_childhood_experiences/en

Chapter 4: Ethics Section

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Ethics Application Form

Faculty of Health and Medicine Research Ethics Committee (FHMREC)

Lancaster University

Application for Ethical Approval for Research involving direct contact with human participants

Instructions *[for additional advice on completing this form, hover PC mouse over 'guidance']*

1. Apply to the committee by submitting:
 - a. **The University's Stage 1 Self Assessment (part A only) and the Project Questionnaire.** These are available on the Research Support Office website: [LU Ethics](#)
 - b. **The completed application FHMREC form**
 - c. **Your full research proposal (background, literature review, methodology/methods, ethical considerations)**
 - d. **All accompanying research materials** such as, but not limited to,
 - 1) Advertising materials (posters, e-mails)
 - 2) Letters/emails of invitation to participate
 - 3) Participant information sheets
 - 4) Consent forms
 - 5) Questionnaires, surveys, demographic sheets
 - 6) Interview schedules, interview question guides, focus group scripts
 - 7) Debriefing sheets, resource lists

Please note that you DO NOT need to submit pre-existing handbooks or measures, which support your work, but which cannot be amended following ethical review. These should simply be referred to in your application form.

2. **Submit all the materials electronically** as a **SINGLE** email attachment in PDF format by the deadline date. **Before converting to PDF ensure all comments are hidden by going into 'Review' in the menu above then choosing *show markup>balloons>show all revisions in line.***
3. **Submit one collated and signed paper copy** of the full application materials in time for the FHMREC meeting. If the applicant is a student, the paper copy of the application form must be signed by the Academic Supervisor.
4. Committee meeting dates and application submission dates are listed on the [FHMREC website](#). Applications must be submitted by the deadline date, to:

Dr Diane Hopkins
B14, Furness College
Lancaster University,
LA1 4YG
d.hopkins@lancaster.ac.uk
5. Prior to the FHMREC meeting you may be contacted by the lead reviewer for further clarification of your application.
6. Attend the committee meeting on the day that the application is considered, if required to do so.

<p>1. Title of Project: What affects the experience of parenting? An investigation of the relationships between schizotypy, attachment and parenting in an analogue sample.</p>
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2. **Name of applicant/researcher:** Melanie Hugill

3. **Type of study**

☒ Includes *direct* involvement by human subjects.

☐ Involves existing documents/data only, or the evaluation of an existing project with no direct contact with human participants. Please complete the University Stage 1 Self Assessment part B. This is available on the Research Support Office website: [LU Ethics](#). **Submit this, along with all project documentation, to Diane Hopkins.**

4. If this is a student project, please indicate what type of project by marking the relevant box: (please note that UG and taught PG projects should complete **FHMREC form UG-tPG**, following the procedures set out on the [FHMREC website](#))

PG Diploma ☐ Masters dissertation ☐ DClinPsy SRP ☐ PhD Thesis ☐ PhD Pall. Care ☐

PhD Pub. Health ☐ PhD Org. Health & Well Being ☐ PhD Mental Health ☐ MD ☐

DClinPsy Thesis ☒

Applicant Information

5. **Appointment/position held by applicant and Division within FHM** Trainee Clinical Psychologist, Division of Health Research

6. **Contact information for applicant:**

E-mail: m.hugill@lancaster.ac.uk **Telephone:** 07866 859331 (please give a number on which you can be contacted at short notice)

Address: 3 Somerset Place, Nelson, Lancs, BB9 8BD

7. **Project supervisor(s), if different from applicant:** Dr Ian Fletcher, Senior Lecturer in Health Research & Dr Katherine Berry, Clinical Psychologist and Senior Lecturer on the Manchester DClinPsy.

8. Appointment held by supervisor(s) and institution(s) where based (if applicable): Senior lecturers on the DClinPsy programme, Dr Fletcher at Lancaster University and Dr Berry at the University of Manchester

9. Names and appointments of all members of the research team (including degree where applicable)

The Project

NOTE: In addition to completing this form you must submit a detailed research protocol and all supporting materials.

10. Summary of research protocol in lay terms (indicative maximum length 150 words):

Evidence suggests that early experiences of relationships (known as attachment) and experiences of early trauma may influence how a new parent views their ability to parent. These factors are also indicated in the development of psychosis and schizotypy (the non-clinical version of psychosis where symptoms are 'weaker' and do not necessarily affect quality of life). Schizotypy, therefore, may also be associated with how a new parent views their parenting skills and how much stress they experience. The proposed study is a cross-sectional design with a target sample of first time primary caregivers of a child from birth to 12 months as any association between the three variables of interest; schizotypy, attachment and parenting may be heightened at this stressful time. Participants will be recruited through advertisements on social media and websites aimed at parents. The study consists of a series of online questionnaire measures.

11. Anticipated project dates (month and year only)

Start date: January 2016

End date: October 2016

12. Please describe the sample of participants to be studied (including maximum & minimum number, age, gender):

Inclusion: The inclusion criteria for this study is as follows:

- First time primary caregivers of a child from birth to 12 months old. The term 'primary caregiver' is used to encompass all those who may provide the main care for a new born infant, such as fathers.

- Mothers who return to work during the first 12 months are also included provided they have been, and continue to be, the primary caregiver.
- Adoptive parents and other primary caregivers such as aunts/uncles who have an infant placed with them during the first 12 months are also eligible to participate provided it is the first child they have taken the role of primary caregiver for.
- Sufficient command of written English to enable participants to complete the measures.

Exclusion: The exclusion criteria is as follows:

- Primary caregivers who have more than one child
- Primary caregivers whose child is more than 12 months' old
- Foster parents (as these placements are generally temporary)
- Grandparents who have guardianship/custody of their children's infant
- Participants who do not have sufficient command of written English

The study aims to recruit in excess of 82 participants as calculated by an a priori power calculation using G*Power. This sample size will enable detection of significant effects as small as $r = .3$, which is a moderate effect. The effect size of .3 was derived from an average of r-values from similar studies investigating attachment and schizotypy and attachment and parenting. The recommended power of 0.80 and alpha level of 0.05 (Field, 2014) was used to complete the a priori calculation.

A minimum sample size of 82 is needed for the purposes of standard correlational and bivariate analyses (see power analysis), but we aim to recruit more participants (a maximum of 500) to enhance sensitivity in testing a mediation model e.g. following the Baron & Kenny (1986) 4 steps to establish possible mediation effects.

13. How will participants be recruited and from where? Be as specific as possible.

Online:

Recruitment for this study will take place online. I will contact the administrators of relevant websites aimed at new parents and request a link to the study be posted on their website and/or their social media accounts. For the purposes of recruitment, the study will be titled 'What affects the experience of parenting?' The email will include the participant information sheet and rationale for the study and invite the organisation to request any further information/documentation they would like to review. Identified websites include netmums, bounty, babycentre, mother & baby, mumsnet, gurgle, new parent, parent dish, britmums, loved by parents, mojomums, parenting, dadzclub, thedadnetwork, new-dads and the National Childbirth Trust (NCT). Online advertisements will be placed on various other platforms (e.g. twitter) via accounts held by the DClinPsy and the Department of Health Research. Participants access the study by clicking on the link which will direct

them to the participant information sheet, followed by the consent form before the study begins. Eligibility to participate will be determined by the first question in the demographic questionnaire: are you a first time parent/caregiver? Participants who answer 'no' to this question will not have further questions made available to them and will be unable to proceed with the survey.

Surestart centres:

If it seems unlikely that the target sample size will be met 3 months into the data collection period (by mid-March) I will contact Surestart centres to request they advertise the study. A poster advertisement for the study will be displayed with tear-off slips giving instructions on how to access the study. Additionally, I will request to attend Surestart centres and mother and baby groups to meet with new parents and ask for participants. I will take participant information sheets to give out along with instructions on how to access the study for those who may wish to access it online. I will also take packs of hard copies of the measures and consent form to give out to participants who cannot/do not wish to complete the study online. Participants can take these away with them and return them via a stamped, addressed envelope, which will be included. I will differentiate between data collected online and data collected via hard copy in the anonymised database.

14. What procedure is proposed for obtaining consent?

Online: Once participants click to enter the study online they will be able to read the participant information sheet which gives details of the study. The following page is a consent form where participants are asked to click next to each item to indicate their consent. Once they click on the last box 'I consent to take part in this study' they will move onto the questionnaires. If participants leave any box unticked on the consent form they will not be able to access the study.

Surestart centres: When recruiting from Surestart Centres I will take the participant information sheet, consent form, debrief sheet and all the measures in hard copies for those participants who may not wish, or be able, to complete the study online. If participants take the instructions on accessing the survey online, then the above procedure for obtaining consent applies. If participants wish to complete the measures in paper form, then they will be given them in a pack to take away with them. The consent form and participant information sheet will be in this pack along with a cover letter explaining that the participant must complete the consent form anonymously and return it with their completed measures.

Participants have the right to withdraw at any time, or decline to take part and this is explained in the participant information sheet and on the consent form. It is also explained that data they have entered up to the point of discontinuing cannot be removed as it is anonymous. The consent form includes this statement and participants have to tick that they understand this before they can continue.

Capacity to consent: It will not be possible to assess capacity to consent as all respondents will be anonymous. Capacity to consent will therefore be assumed.

15. What discomfort (including psychological eg distressing or sensitive topics), inconvenience or danger could be caused by participation in the project? Please indicate plans to address these potential risks.

It is not anticipated that completing the measures will cause participants distress, however the study includes a number of aspects to mitigate against any potential distress that may be caused. Participants will be advised in the participant information sheet that there may be some questions of a sensitive nature and that they are able to discontinue the study at any time should they feel distressed. A list of resources participants could contact if they need support at any time is also included at the end of the participant information sheet. The resources suggested are the participants' GP, their health visitor or midwife, the Samaritans, the NSPCC and Family Lives which is a charity aimed at supporting families. These details have been included in the participant information sheet in case participants read this and then decide they do not wish to take part. Participants will be advised on the first page of the study to print/make a note of the 'resources in case of distress' from the information sheet in case they begin the study and decide not to continue. The debrief sheet, which again includes the resources in case of distress, will appear automatically at the end of the study for all participants. Evidence suggests that the potential for research participants to experience distress is low, for example Newman, Risch and Kassam-Adams (2006) undertook a review of studies regarding distress following being asked about trauma. They concluded that "evidence thus far suggests that there is a low likelihood of significant emotional harm from participating in trauma-focused studies" (p.36). Additionally, Griffin, Resick, Waldrop and Mechanic (2003) found that various types of trauma research methodology, including computer-administered questionnaires, were not rated as distressing to participants. The evidence suggests therefore there are few, if any, negative effects of participating in online research that include questions of a sensitive nature.

16. What potential risks may exist for the researcher(s)? Please indicate plans to address such risks (for example, noting the support available to you; counselling considerations arising from the sensitive or distressing nature of the research/topic; details of the lone worker plan you will follow, and the steps you will take).

Online study: There will not be any personal risks as I will not be meeting any participants face to face in the online study. However, my Lancaster email address will be included in the participant information sheet and participants could potentially contact me. If this happens, I will share the email with my supervisors and ask for guidance on how to manage this.

Surestart centres: Again, I do not anticipate many potential risks in visiting these centres as they are public places. I will not be visiting participants at their homes. However, I will ensure I adhere to Lancaster University's lone worker policy, specifically by agreeing a time to visit and sharing this with my field supervisor. I will also arrange to contact my field supervisor once I have left the centre, with a plan in place for if I do not make contact by a certain time. If I encounter any problems I will contact my supervisors.

17. Whilst we do not generally expect direct benefits to participants as a result of this research, please state here any that result from completion of the study.

There are no direct benefits to participants from taking part in this research. Findings from this study may help us to better understand some of the different factors that may affect how someone experiences being a new parent, which may aid the development of preventative interventions in the future.

18. Details of any incentives/payments (including out-of-pocket expenses) made to participants:

There will be a £50 prize draw to win an Amazon voucher. Participants will be asked to leave an email address if they wish to be entered into the draw. These will be kept separately from participants' responses to maintain confidentiality. The winner will be notified by email in September 2016 following which all email addresses will be deleted.

19. Briefly describe your data collection and analysis methods, and the rationale for their use. Please include details of how the confidentiality and anonymity of participants will be ensured, and the limits to confidentiality.

Data will be collected through Qualtrics, Lancaster University's online survey software. Participants will enter the survey via a link that will be shared through websites aimed at parents and via social media, though I will not use my personal social media for this. I will email the administrators of target websites (examples of which are given above in section 13) asking them to place a link to the study on their site and/or social media. I will attach the participant information sheet for their information. The study will also be launched on Twitter via Lancaster University's DClinPsy account. I will enter any data from participants who completed the measures on hard copies into Qualtrics and destroy the paper copies within five working days of receiving them. Participants will be asked to complete six different measures in the following order:

Demographics questionnaire: Up to 15 questions asking participants for basic information such as age, gender, age and gender of their child, nationality and prior mental health conditions.

Parenting Sense of Competence Scale (PCOS) (Gibaud-Wallston & Wandersman, 1978, in Johnston & Mash, 1989): The PCOS is a 16-item scale that measures parents' sense of confidence and satisfaction with their parenting. Parents are asked to indicate their level of agreement with each item on a six-point scale from 1: strongly agree to 6: strongly disagree. Internal consistency is reported as adequate ranging from .75-.88 (Gilmore & Cuskelly, 2009).

Parental Stress Scale (Berry & Jones, 1995): This scale was developed as an alternative to the 101-item Parenting Stress Index. The items represent both positive and negative themes of parenthood.

Parents indicate their level of agreement with 18 items on a five-point scale from 1: strongly disagree to 5: strongly agree. Reliability was reported as good with a coefficient alpha level of 0.83.

Experiences of Close Relationships Scale-Short Form (ECR-S) (Wei, Russell, Mallinckrodt & Vogel, 2007): The ECR-S is a 12-item scale used to measure adult attachment. Reliability is reported to be good with coefficient alpha levels of .78 for the anxiety subscale and .84 for the avoidance subscale. Participants are asked to indicate their level of agreement with each item on a seven-point scale from 1: strongly disagree to 7: strongly agree.

Schizotypal Personality Questionnaire – Brief Revised (SPQ-BR) (Cohen, Matthews, Najolia & Brown, 2010): The SPQ is a 32-item scale used to assess schizotypal traits organised into seven trait subscales: 1) odd beliefs or magical thinking, 2) unusual perceptual experiences, 3) excessive social anxiety, 4) odd or eccentric behaviour, 5) odd speech, 6) no close friends and constricted affect, and 7) ideas of reference and suspiciousness. Participants are asked to indicate their level of agreement with each item on a five-point scale from 0: strongly disagree to 4: strongly agree. Internal reliability is reported to be ‘robust’ with a mean alpha coefficient of .91 (Callaway, Cohen, Matthews & Dinzeo, 2014).

Adverse Childhood Experiences Questionnaire (ACE) (Felitti et al, 1998): A 10-item screening questionnaire was developed from the results of this study to ascertain presence of trauma before the age of 18 years. The World Health Organisation have recently developed a lengthier version intended to measure ACE’s in all countries and explore associations with subsequent risk behaviours. Participants score out of 10 is made up by the number of different types of trauma they indicate they have experienced.

It is estimated the survey will take between 20-30 minutes to complete. The names of the measures will not be used in the survey. Furthermore, participants will not be required to answer all questions on a page before moving on. Participants may not wish to answer some of the more sensitive questions and may drop out completely if they cannot leave these questions out. Allowing participants to leave some questions unanswered means potentially losing only minimal data rather than whole sets of data.

Analysis: Correlational and multiple regression analyses will be used to test the strength of the relationships between the key variables (schizotypy, attachment, parenting, memories of parental bonding). A series of mediational analyses will then test for possible mediation models. Analyses will be carried out using appropriate software packages.

Confidentiality: Participation in the study is anonymous and participants will not be asked to disclose any identifying information, such as name or address. For those potential participants who I may meet face to face, anonymous participation is also guaranteed as I will not know if they actually go on to complete the questionnaires and therefore which data is theirs. For those participants who complete the measures on paper and send them through the post, I will not know who has sent them as no identifying information is asked for. Participants will be advised to send their email

addresses in a separate stamped addressed envelope which will be provided. The data participants enter will be pooled with the responses of other participants and confidentiality is therefore maintained as responses cannot be traced to participants. The only identifying information participants are asked for, if they wish to give it, is their email address.

Email addresses: If participants provide their email address to be entered into the prize draw and/or receive a summary of the results, these will be kept separately from the study data and stored in a password encrypted file on Lancaster University's secure server (H: Drive). This file will be deleted at the end of the study period, estimated to be in September 2016. I will enter any hard copies of the questionnaires onto Qualtrics and the paper copies will be destroyed via secure shredding within five working days of receipt. If these participants have provided an email address to be entered into the prize draw or to receive a summary of the study, these will be stored with the other email addresses in the password encrypted file on Lancaster University's secure server. Any paper copies will then be destroyed via secure shredding.

20. If relevant, describe the involvement of your target participant group in the *design and conduct* of your research.

I have sought feedback on the participant information sheet from parents at a mother and baby/toddler group. I distributed the participant information sheet to new mothers attending the group (eight individuals) and returned to them approximately 30 minutes later for feedback. No changes were suggested by anyone and all respondents commented that the information was accessible and the study sounded interesting.

21. What plan is in place for the storage of data (electronic, digital, paper, etc.)? Please ensure that your plans comply with the Data Protection Act 1998.

Data for this study will be collected on Qualtrics. I will enter any paper copies of the consent form and measures into Qualtrics via VPN access to the secure H:Drive and I will destroy the paper copies within five working days of receipt using the DClinPsy secure shredding service. Once downloaded from this system for analysis all data will be stored on Lancaster University's secure server on the H:Drive. Data held on Lancaster ISS systems are stored in a resilient storage infrastructure which is dual homed in the ISS data centres (on site). Data will be shared with the supervisors of the project via Box cloud storage, which is a secure way to share data used by Lancaster University. The email addresses provided by participants will be stored in a separate password encrypted file on the H:Drive and will be deleted once the winner of the Amazon voucher has been notified and the summary of results has been distributed in approximately September 2016. All other data will be stored by the DClinPsy programme for 10 years in accordance with Lancaster University guidance.

22. Will audio or video recording take place? ☒ no ☐ audio ☐ video

If yes, what arrangements have been made for audio/video data storage? At what point in the research will tapes/digital recordings/files be destroyed?

23. What are the plans for dissemination of findings from the research? If you are a student, include here your thesis.

The research will be submitted to Lancaster University's Doctorate in Clinical Psychology programme as part of a thesis project. Results may also be submitted for publication in an academic/professional journal and presented at university or at conferences. Feedback will be offered to those websites who agreed to advertise the study and participants will be given the option of receiving a summary of the study via email. Participants are given the option to enter their email address at the end of the survey and they will be asked to tick whether they wish to receive a summary of the results and/or be entered into the prize draw. Those participants who request to receive feedback will also be re-sent the information on potential sources of support that is included on the participant information sheet and debrief form.

24. What particular ethical considerations, not previously noted on this application, do you think there are in the proposed study? Are there any matters about which you wish to seek guidance from the FHMREC?

If the study recruits from Surestart centres I will be meeting potential participants face to face. However, I will not be asking individuals to complete the measures in my presence as this may place undue pressure on them. Potential participants will be given a pack to take away with them and return anonymously once they have completed the measures.

Signatures: Applicant:M. Hugill.....

Date:25/11/15.....

*Project Supervisor (if applicable):

Date:

*I have reviewed this application, and discussed it with the applicant. I confirm that the project methodology is appropriate. I am happy for this application to proceed to ethical review.

Appendix B: Parenting Sense of Competence Scale

PARENTING SENSE OF COMPETENCE SCALE (PSOC).

Source: The items are from the 16-item Parenting Sense of Competence Scale. Used with Permission

Reference: Johnston, C., & Mash, E.J. (1989). A measure of parenting satisfaction and efficacy. *Journal of Clinical Child Psychology*, 18, 167-175. /From Gibaud-Wallston, J. & Wandersman, L.P., 1978.

Acknowledgement : Parenting Sense of Competence Scale. Gibaud-Wallston, J. & Wandersman, L.P., 1978/Johnston, C. & Mash, E.J., 1989. Used with permission.

Gilmore, L. & Cuskelly, M. (2009). Factor structure of the Parenting Sense of Competence Scale using a normative sample. *Child Care, Health & Development*, 38, 48-55.

Scale Description: The Parenting Sense of Competence Scale is a 16-item scale that measures parents' sense of confidence and satisfaction with their parenting.

Scoring and Algorithm

Note: For each assessment, there is a scoring algorithm leading to one of three acuity ranges: Low, Moderate, or High.

The items are scored 1-6 as described below; total score is sum of all 16 items, possible range 16- 96.

Strongly agree = 1 Agree = 2 Mildly agree = 3 Mildly disagree = 4 Disagree = 5 Strongly disagree = 6

The following items are reverse scored: 1, 6, 7, 10, 11, 13, 15

Algorithm

Total = 70-96 High Parental-Confidence Total = 51-69 Moderate Parental-Confidence

Total = 16-50 Low Parental-Confidence

Additional Instructions

Depending on whether the test taker is a mother or father, replace “parent” with the appropriate designation. If test taker is neither a mother or father but serves in a parenting role, remove the parenthesis around “parent” and leave it in place.

Parenting Confidence

Instructions: Listed below are a number of statements. Please respond to each item, indicating your agreement or disagreement with each statement.

1. The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired.

1 2 3 4 5 6

Strongly agree Agree Mildly agree Mildly Disagree Disagree Strongly Disagree

2. Even though being a (parent) could be rewarding, I am frustrated now while my child is at his/her present age.

1 2 3 4 5 6

Strongly agree Agree Mildly agree Mildly Disagree Disagree Strongly Disagree

3. I go to bed the same way I wake up in the morning—feeling I have not accomplished a whole lot.

1	2	3	4	5	6
Strongly agree	Agree	Mildly agree	Mildly Disagree	Disagree	Strongly Disagree

4. I do not know what it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.

1	2	3	4	5	6
Strongly agree	Agree	Mildly agree	Mildly Disagree	Disagree	Strongly Disagree

5. My (parent) was better prepared to be a good (parent) than I am.

1	2	3	4	5	6
Strongly agree	Agree	Mildly agree	Mildly Disagree	Disagree	Strongly Disagree

6. I would make a fine model for a new (parent) to follow in order to learn what she/he would need to know in order to be a good (parent).

1	2	3	4	5	6
Strongly agree	Agree	Mildly agree	Mildly Disagree	Disagree	Strongly Disagree

7. Being a (parent) is manageable, and any problems are easily solved.

1	2	3	4	5	6
Strongly agree	Agree	Mildly agree	Mildly Disagree	Disagree	Strongly Disagree

8. A difficult problem in being a (parent) is not knowing whether you're doing a good job or a bad one.

1	2	3	4	5	6
Strongly agree	Agree	Mildly agree	Mildly Disagree	Disagree	Strongly Disagree

9. Sometimes I feel like I'm not getting anything done

1 2 3 4 5 6

Strongly agree Agree Mildly agree Mildly Disagree Disagree Strongly Disagree

10. I meet my own personal expectations for expertise in caring for my child.

1 2 3 4 5 6

Strongly agree Agree Mildly agree Mildly Disagree Disagree Strongly Disagree

11. If anyone can find the answer to what is troubling my child, I am the one.

1 2 3 4 5 6

Strongly agree Agree Mildly agree Mildly Disagree Disagree Strongly Disagree

12. My talents and interests are in other areas, not in being a (parent).

1 2 3 4 5 6

Strongly agree Agree Mildly agree Mildly Disagree Disagree Strongly Disagree

13. Considering how long I've been a (parent), I feel thoroughly familiar with this role.

1 2 3 4 5 6

Strongly agree Agree Mildly agree Mildly Disagree Disagree Strongly Disagree

14. If being a (parent) of a child were only more interesting, I would be motivated to do a better job as a (parent).

1 2 3 4 5 6

Strongly agree Agree Mildly agree Mildly Disagree Disagree Strongly Disagree

15. I honestly believe I have all the skills necessary to be a good (parent) to my child.

1	2	3	4	5	6
Strongly agree	Agree	Mildly agree	Mildly Disagree	Disagree	Strongly Disagree

16. Being a (parent) makes me tense and anxious.

1	2	3	4	5	6
Strongly agree	Agree	Mildly agree	Mildly Disagree	Disagree	Strongly Disagree

Appendix C: Parenting Stress Scale

Tool 1: Parental Stress Scale (questionnaire attached)

Component being measured:

- Attempts to measure the levels of stress experienced by parents.
- Takes into account positive and negative aspects of parenting.

Why this outcome matters?

Higher levels of parental stress related to:

- Lower levels of parental sensitivity to the child
- Poorer child behaviour
- Lower quality of parent – child relationship.

In particular, provides evidence related to Children's Centres work to 'improve parenting' and Core Purpose goal of 'improving parenting skills'

Tool details:

- Developed by Berry and Jones (1995) as an alternative to the 101-item Parenting Stress Index.
- Provides a measure that considers positive aspects of parenting as well as the negative, 'stressful' aspects traditionally focused on.

Format of the tool:

- 18 – item self report scale – items represent positive (e.g. emotional benefits, personal development) and negative (demands on resources, restrictions) themes of parenthood.
- Respondents agree or disagree in terms of their typical relationship with their child or children
- 5 – Point scale; strongly disagree, disagree, undecided, agree, strongly agree.

Use of the tool:

What can the tool help to assess?

- Changes in parental stress levels for parents/carers who have accessed targeted support, such as family support, parenting courses and one to one parenting support.
- The outcomes of services or areas of work focused on improving parents/carers parenting capacity.

Practical administration:

- Self completion or could be administered as an interview.
- The scale is relatively short and easy to administer – can be completed in less than 10 minutes.
- Can be used as a before and after measure.

Scoring the tool :

We want a low score to signify a low level of stress, and a high score to signify a high level of stress.

Parental Stress Scale

The following statements describe feelings and perceptions about the experience of being a parent. Think of each of the items in terms of how your relationship with your child or children typically is. Please indicate the degree to which you agree or disagree with the following items by placing the appropriate number in the space provided.

1 = Strongly disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly agree

1	I am happy in my role as a parent	
2	There is little or nothing I wouldn't do for my child(ren) if it was necessary.	
3	Caring for my child(ren) sometimes takes more time and energy than I have to give.	
4	I sometimes worry whether I am doing enough for my child(ren).	
5	I feel close to my child(ren).	
6	I enjoy spending time with my child(ren).	
7	My child(ren) is an important source of affection for me.	
8	Having child(ren) gives me a more certain and optimistic view for the future.	
9	The major source of stress in my life is my child(ren).	
10	Having child(ren) leaves little time and flexibility in my life.	
11	Having child(ren) has been a financial burden.	
12	It is difficult to balance different responsibilities because of my child(ren).	
13	The behaviour of my child(ren) is often embarrassing or stressful to me.	
14	If I had it to do over again, I might decide not to have child(ren).	
15	I feel overwhelmed by the responsibility of being a parent.	
16	Having child(ren) has meant having too few choices and too little control over my life.	
17	I am satisfied as a parent	
18	I find my child(ren) enjoyable	

Scoring

To compute the parental stress score, items 1, 2, 5, 6, 7, 8, 17, and 18 should be reverse scored as follows: (1=5) (2=4) (3=3) (4=2) (5=1). The item scores are then summed.

Scoring the tool :

We want a low score to signify a low level of stress, and a high score to signify a high level of stress

- **Overall possible scores on the scale range from 18 – 90.**
- **The higher the score , the higher the measured level of Parental stress**

Use a simple table to show the before and after results to evidence whether an intervention has had a positive effect.

- **Comparison of individuals before / after or longitudinal overall Parental Stress Scale scores.**
- **The comparison of before and after mean average scores for groups (parents/carers accessing the particular intervention/group sessions, service or provision)**

Appendix D: Experiences in Close Relationships Scale – Short Form (ECR-S)

Experiences in Close Relationship Scale-Short Form (ECR-S)

Instruction: The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Mark your answer using the following rating scale:

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

1. It helps to turn to my romantic partner in times of need.
2. I need a lot of reassurance that I am loved by my partner.
3. I want to get close to my partner, but I keep pulling back.
4. I find that my partner(s) don't want to get as close as I would like.
5. I turn to my partner for many things, including comfort and reassurance.
6. My desire to be very close sometimes scares people away.
7. I try to avoid getting too close to my partner.
8. I do not often worry about being abandoned.
9. I usually discuss my problems and concerns with my partner.
10. I get frustrated if romantic partners are not available when I need them.
11. I am nervous when partners get too close to me.
12. I worry that romantic partners won't care about me as much as I care about them.

Scoring Information:

Anxiety = 2, 4, 6, 8 (reverse), 10, 12

Avoidance = 1 (reverse), 3, 5 (reverse), 7, 9 (reverse), 11

Appendix E: Schizotypal Personality Questionnaire – Brief Revised (SPQ-BR)

SPQ-BR

Instructions:

Please read the following statements and answer them as honestly as possible, giving only your own opinion of yourself. Do not skip any items and answer them as honestly as possible, giving only your own opinion of yourself. When thinking about yourself and your experiences, do not count as important those attitudes, feelings, or experiences you might have had only while under the influence of alcohol or other drugs (e.g., marijuana, LSD, cocaine).

Response Format:

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

SPQ-BR Items (with corresponding SPQ items)

1	SA 2	I sometimes avoid going to places where there will be many people because I will get anxious.
2	EB 5	Other people see me as slightly eccentric (odd).
3	MT 12	Do you believe in telepathy (mind-reading)?
4	EB 14	People sometimes comment on my unusual mannerisms and habits.
5	OS 16	I sometimes jump quickly from one topic to another when speaking.
6	CA 17	I am not good at expressing my true feelings by the way I talk and look.
7	UP 22	When you look at a person or yourself in a mirror, have you ever seen the face change right before your eyes?
8	OS 25	I sometimes forget what I am trying to say.
9	CA 26	I rarely laugh and smile.
10	S2 7	Do you sometimes get concerned that friends or co-workers are not really loyal or trustworthy?
11	SA 29	I get anxious when meeting people for the first time.
12	MT 30	Do you believe in clairvoyance (psychic forces, fortune telling) ?
13	UP 31	I often hear a voice speaking my thoughts aloud.
14	CF 33	I find it hard to be emotionally close to other people
15	OS 34	I often ramble on too much when speaking.
16	SA 38	Do you often feel nervous when you are in a group of unfamiliar people?

17	CF 41	Do you feel that there is no one you are really close to outside of your immediate family, or people you can confide in or talk to about personal problems?
18	IR4 5	When shopping do you get the feeling that other people are taking notice of you?
19	SA 46	I feel very uncomfortable in social situations involving unfamiliar people.
20	MT 47	Have you had experiences with astrology, seeing the future, UFO's, ESP, or a sixth sense?
21	UP 48	Do everyday things seem unusually large or small?
22	MT 55	Have you ever felt that you are communicating with another person telepathically (by mind-reading)?
23	OS 58	Do you tend to wander off the topic when having a conversation?
24	S5 9	I often feel that others have it in for me.
25	IR6 0	Do you sometimes feel that other people are watching you?
26	IR6 3	Do you sometimes feel that people are talking about you?
27	UP 64	Are your thoughts sometimes so strong that you can almost hear them?
28	S6 5	Do you often have to keep an eye out to stop people from taking advantage of you?
29	CF 66	Do you feel that you cannot get "close" to people.
30	EB 67	I am an odd, unusual person.
31	EB 70	I have some eccentric (odd) habits.
32	CA 73	I tend to keep my feelings to myself.

Appendix F: Adverse Childhood Experiences (ACE) Questionnaire

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household often ... Swear at you, insult you, put you down, or humiliate you? or Act in a way that made you afraid that you might be physically hurt? Yes No If yes enter 1 _____

2. Did a parent or other adult in the household often ... Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured? Yes No If yes enter 1 _____

3. Did an adult or person at least 5 years older than you ever... Touch or fondle you or have you touch their body in a sexual way? or Try to or actually have oral, anal, or vaginal sex with you? Yes No If yes enter 1 _____

4. Did you often feel that ... No one in your family loved you or thought you were important or special? or Your family didn't look out for each other, feel close to each other, or support each other? Yes No If yes enter 1 _____

5. Did you often feel that ... You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it? Yes No If yes enter 1 _____

6. Were your parents ever separated or divorced? Yes No If yes enter 1 _____

7. Was your mother or stepmother: Often pushed, grabbed, slapped, or had something thrown at her? or Sometimes or often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife? Yes No If yes enter 1 _____

8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs? Yes No If yes enter 1 _____ 9. Was a household member depressed or mentally ill or did a household member attempt suicide? Yes No If yes enter 1 _____

10. Did a household member go to prison? Yes No If yes enter 1 _____

Now add up your "Yes" answers: _____ This is your ACE Score

Appendix G: Final Ethical Approval Letter



Applicant: Melanie Hugill
Supervisor: Ian Fletcher
Department: Health Research
FHMREC Reference: FHMREC15051

15 February 2016

Dear Melanie,

Re: What affects the experience of parenting? An investigation of the relationships between schizotypy, attachment and parenting in an analogue sample.

Thank you for submitting your research ethics amendment application for the above project for review by the Faculty of Health and Medicine Research Ethics Committee (FHMREC). The application was recommended for approval by FHMREC, and on behalf of the Chair of the University Research Ethics Committee (UREC), I can confirm that approval has been granted for this research project.

As principal investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;
- reporting any ethics-related issues that occur during the course of the research or arising from the research to the Research Ethics Officer (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress);
- submitting details of proposed substantive amendments to the protocol to the Research Ethics Officer for approval.

Please contact the Diane Hopkins (01542 592838 fhmresearchsupport@lancaster.ac.uk) if you have any queries or require further information.

Yours sincerely,

A handwritten signature in black ink that reads "Diane Hopkins".

Dr Diane Hopkins
Research Development Officer

CC Ethics@Lancaster; Professor Roger Pickup (Chair, FHMREC)